ALASKA

ITS MEANING TO THE WORLD

ITS RESOURCES ITS OPPORTUNITIES

By CHARLES R. TUTTLE

Author "Our Northland," "The Golden North," etc., Meteorological Observer, Canadian Government Expedition to Hudson's Bay and Straits, 1884.

ILLUSTRATED

SEATTLE, WASH.
FRANKLIN SHUEY & CO., PUBLISHERS
1914.

From the
Press of Lowman & Hanford Co.,
Seattle, Wash.

TO

THE PIONEERS OF ALASKA

AND

THEIR FRIENDS IN TIME OF NEED

OF

SEATTLE, WASHINGTON

THIS COMPILATION OF THE RESOURCES

AND OPPORTUNITIES OF THE

GREAT NORTH COUNTRY

IS

RESPECTFULLY DEDICATED

INTRODUCTION

THIS work in no sense whatever is a promotion effort on behalf of Alaska, or any section, town or enterprise thereof, or of any special place, city or interest. Its author and compiler enjoys no material interest in Alaska. He is not concerned in any way with any of the resources or enterprises covered by the following pages, beyond what the average citizen of the State of Washington naturally should entertain towards them.

The object in hand is to supply readers,—the people generally—of all lands where this language is read and spoken, with a plain descriptive account, practical and useful, of *"Alaska; its Meaning to the World; its Resources; its Opportunities,"*—of Alaska which is the newest and richest undeveloped country of the earth—of Alaska, a wonderland, because its vast and diversified resources are as yet in the morning of discovery. Seventeen years ago we knew practically nothing about Alaska. Today we only know that its greatness in many things is attracting the attention of the world in such a way that more than three hundred million people desire to know more of the extent of this greatness.

This situation is embodied in an almost universal demand for such a volume as this, in the face of which there was not to be found in a bookshop or library of the whole land, a complete account of the Alaska of today. This condition is due to the fact that so much has been accomplished for this great new territory, within it, and outside its boundaries, during the last past fifteen years; and to the other fact that a vast amount of official data, and other documentary materials have so quickly accumulated, that there has not been time enough at the

disposal of even an experienced compiler to flux them into a natural compound. Moreover, a natural point-of-view-summit had not been attained, until the enactment of important laws on behalf of Alaska, by the Congress of the United States, within a few weeks, supplied one of sufficient departure-significance, to provide the necessary datum for such a work.

Thus, valuable historic and descriptive data was found to be piled up in various places, in 1914, in such an unclassified condition as to over challenge the energies of the most resolute compiler. The writer faced the task, in an attempt to complete the work within time limits which precluded the possibilities of needful literary finish. He has been compelled to be content, as the reader will have to be satisfied, or otherwise, with a plain, connected elaboration of subjects, much of it in the terminology of official and other reports and documents, or condensations of them, by writers whose names, in many cases, could not readily be ascertained. On account of this latter condition, I, doubtless have given personal credit for important facts where, strictly speaking, credit was not due, and unintentionally withheld it when it was due. Nearly the whole mass of data gathered had to be regarded as common property, and this particularly is the case with government official reports, as well as compilations made from them, by editors working for chambers of commerce, commercial clubs, and so on.

My aim has been to credit writers and authors rather than organizations which have put out these publications, but in many cases, as stated, this course was found to be impossible. Nevertheless credits and quotation marks appear with great frequency on the following pages.

It is quite impossible to mention, specifically, any considerable number of the sources of information from which the facts appearing on the following pages have been drawn, but three or four classes of these demand attention here. First, there are the Geological Survey, and

agricultural reports of the Federal Government; the reports of the Department of the Interior; the reports of Prof. C. C. Georgeson, Director of the Government Experimental Stations in Alaska, and many others of a similar nature. In the second place, and of indispensable importance is the voluminous report of the Railroad Commission, a great part of which I have appropriated almost bodily. Then, the annual report of 1913, of Governor Strong of Alaska, a document of great value which should be read and studied by the people generally. The excellent publications of the Alaska bureau of the Seattle Chamber of Commerce, notably the valuable compilation of Capt. R. H. Stretch, assistant secretary of this bureau, have been of great service in my labors. The files of the Seattle newspapers also have contributed very much important data. To specifically enumerate further would be in the nature of listing scores and even hundreds of sources of information without which this effort would not have been carried to anything like completeness.

Dr. Hudson Stuck, archdeacon of the Yukon, whose "Ten Thousand Miles with a Dog Sled" is a valuable contribution to Alaska travel-literature, says that there is no man living who knows the whole of Alaska, or who has any right to speak about the whole of Alaska. He says that when a man from Nome writes of Alaska he means his part of Alaska, the Seward Peninsula; that when one in Cordova or Valdez speaks of Alaska, he means the Prince William Sound country; that when a man from Juneau talks of Alaska he means the southeastern coast. "Alaska," he says, "is not one country but many. With different climates, different resources, different problems, different populations, different interests,—what is true of one part of it is often grotesquely untrue of another part."

These pertinent observations plainly show the value of a compilation of the writings and sayings of all who

have traveled in Alaska and who have truthfully written and talked about the country, over a production exclusively drawn from the actual knowledge of any one person, and they indicate very correctly the modest genius of this volume, which attempts to assemble the writings and reports of all who have contributed comments of value on the great north country. This feature of our work is, in this particular case, a demonstration of the superior utility of a compilation as against the observations of any one traveler in Alaska.

In this connection, I should not fail to acknowledge on behalf of the people of Alaska and the public at large, the splendid services which the Seattle Chamber of Commerce and its Alaska bureau, the other semi-commercial and social organizations of Seattle, the Seattle press, and other agencies have performed in the cause of Alaska.

In this hurried effort, the writer's knowledge of the northland, gained by years of service as a traveler, explorer, meteorological and topographical reporter in the higher latitudes proved of some value, but it must not be forgotten that no one person, in any complete sense is the author of this volume. While it is the product of the writer as a compiler, it has many authors, whose writings have been somewhat loosely thrown together, in an effort which may be esteemed as more or less successful, in providing the public with a reliable volume on Alaska, such as, it is believed, the present demand calls for.

Unimportant errors may have found a temporary lodgement on the following pages, but if so, these will be eliminated in subsequent editions, besides, additional matter will be provided from year to year, as editions of this volume succeed each other, keeping it up to date in all respects.

And now Alaska, and the whole Pacific Northwest enter upon a new era of development. Nature and human skill once more unite in the rounds of eternal progress, this time on a higher plane of economics than ever before. That the National Government of the United States, this early in the twentieth century, should take a direct hand in the management of industrial developments, was to have been expected from the economic agitation of the past quarter of a century. The trusts have been built and are beginning to decay. It is in demonstration that the public service ever is menaced by private monopoly. No more wholesome doctrines of industrial economy can be found than those which appear in the recent Annual Report to the President of Franklin K. Lane, Secretary of the Interior, in his references to conditions in the West and Northwest.

Alaska, in its present attitude and condition, provides the United States Government with an economic opportunity, such as no nation of the earth has been afforded in all the history of mankind. Students of the "signs of our times" believe that the present administration will succeed in inaugurating and carrying out policies in that new territory of limitless resources which many nations profitably will emulate. Readers of this volume are cordially invited to join us in watching the wonderful growth of Alaska, on new lines, during the next few years.

JUNE, 1914.
SEATTLE, WASH. CHAS. R. TUTTLE.

INSPIRATION POINT ON THE W. P. & Y. R.

Photo by Curtis & Miller — Courtesy W. P. & Y. R.

SPIRIT MOUNTAIN AND COPPER RIVER ON C. R. & N. RY.

CONTENTS

LIST OF ILLUSTRATIONS

ALASKA
ITS MEANING TO THE WORLD
Its Resources Its Opportunities

CHAPTER I.

NORTHWEST TREND OF PROGRESS.

THE MARCH OF NATURAL AND HUMAN PROGRESS IN A NORTHWEST COURSE — INTERRELATIONSHIP OF NATURAL AND PURPOSIVE INDUSTRY — ALASKA AND THE PANAMA CANAL — THE EVOLUTION OF NATURAL RESOURCES — NATURE'S SUPPLY NEVER FAILING — CLIMATIC INFLUENCES ON THE EVOLUTION OF CIVILIZATION — CONQUEST OF ALASKA BY THERMAL OCEANIC CURRENTS.

THE most potential events of the world's progress are seldom seen in their true significance until long after their first appearance. It will require a hundred years to master a true interpretation of the completion of the Panama Canal and the new opening of Alaska, which invest the second decade of the Twentieth Century with imperishable interest.

Long before the expiration of the period named, the supremacy of the world's commerce will have passed from the Atlantic to the Pacific Ocean, and North Pacific Coast cities, with Seattle the chief metropolis, will have outgrown New York, Boston and Philadelphia. More than this the author predicts that a great commercial city will have risen at the head of Prince William Sound, as a new land mark in the invincible, northwest march of human progress.

Nor is this optimistic vision of the future more than a reasonable prediction of the achievements to be realized within the present century, if the history of the Nineteenth Century is to repeat itself in the new incoming era. One surely is blind to the signs of these new times, and deaf to the voices everywhere struggling for recognition, who can not see and hear this approach of material realization. The human race is marching onward and upward, in a northwest course, erecting at each turning point, wonderful monuments commemorative of the triumph of art, science, discovery and conquest, and it will continue in this wonderful pilgrimage of creative duration until the Perfect Day.

The rather small compass of this volume makes it inexpedient to be detained, except by passing observations, with consideration of subjects introductory to the natural history relationship of Alaska to the other portions of the continent to which it belongs. This relationship becomes important to the present effort because, as we plainly can see, the commercial supremacy of the world is passing from the Atlantic to the Pacific Ocean. In this progress, human advancement evidently is following in the pathway of natural development of soil and climate.

The Panama Canal, where for ages an isthmus connecting two great continents has been challenging human skill to a work of uniting the traffic of two mighty oceans, now presents to the world the most inspiring monument to progress ever constructed on the earth. This wonderful summit of human achievements, metaphorically speaking, today extends its potential hand along the west coast of the North American continent, to that surpassing great monument of natural history achievements, in the North, which we call Alaska, which has occupied many ages in the building,—and thus the race beholds the first visible demonstration, of great historical significance, of the truth

that human industry supplements, without supplanting natural process.

Thus, man and his world advance and rise together in a procession of achievements which declare that the creation of both have but begun. The Panama Canal is said to be finished, but the creation of Alaska,—the great North American Addition to the northern hemisphere—is still in the making, by a natural process and progress which never will end, and which in a distant future will resolve it to a tropical garden, in order to make room for still more northern developments of natural resources.

Faddists are declaring that our natural resources are becoming exhausted, and that a day is approaching when human opportunities will have become so greatly diminished that there will be no further call for human industry in the world-vineyard. These alarmists should be reminded that there is the evolution of our world, ever providing new fields for conquest. Seed time and harvest for human industry never will fail, because the natural development of the physical universe ever is drawing fresh supplies and new opportunities from the inexhaustible, resourceful realm within it.

Just as the population of this nation has reached in excess of the hundred million mark, and as economists have completed figures measuring the period when this great family will have become numerically doubled, and, even before the dawn of new natural requirements, the doors of Alaska, with its 586,400 square miles of new opportunities grandly are swinging open to the people of the United States and to the over-crowded countries of the world! Do we not see that old Nature never sleeps,—never becomes weary? The sun of new opportunities ever is rising just in advance of the vanguard of human progress, and always in the direction of the ever extending Northwest. Natural history science bids one to declare that before the Alaska now at our doors is peopled and developed, a new and even

greater Land of Promise will break into vision just beyond it.

Thus human progress ever follows in the trail of the natural evolution of new opportunities,—new resources. This dual advancement forever and forever will continue its creative duration. "Waste not, want not" is the true motto of conservation, but when conservation becomes a hobby, hindering the free use, and unrestrained appropriation of natural bounties, it attributes poverty to the potentialities of nature, when, in truth, poverty has no proper dwelling place in all the realms of the universe. Poverty, or scarcity is a libel upon the inexhaustible resources of the physical universe, because, by the nature of evolution, the whole wealth of this great realm must appear. And this work of natural evolution is in the morning of unfoldment. Therefore, the storehouses of physical resources and material opportunities are just beginning to open their doors to the skill and enterprise of mankind. The treasures of Mother Earth, as yet, are nearly all to be discovered. The riches of the inheritance of mankind are only beginning to be revealed.

The potentialities of the earth, for the far greater part, are still hidden. As they come forth in a clearer human understanding, discoveries and inventions will give us a new order of human life. In a wonderful way we live in a world of inexhaustible riches already on our every touch, but, by purposive industry, humanity must creatively discover this natural wealth in order to appropriate its bounties.

We have no concern with the Panama Canal in this book, excepting such introductory references as may be needful to disclose the wonderful significance of the completion of this work, just as the mighty resources of Alaska are being more completely revealed and placed within reach of human enterprise. During the sixteenth and seventeenth centuries, Spanish explorers urged their govern-

ment to dig a canal, and "some surveys," says C. E. Sanders, "were made, the earliest in 1527 by Cortez, who was the first man to suggest both the Panama and Nicaragua routes. In 1768 a Scotch company made a disastrous attempt to settle the Isthmus of Panama and dig the canal across the Darien route, but the initial endeavor entitled to real consideration was undertaken by a French company under the leadership of Count DeLesseps, who had successfully constructed the Suez Canal."

In 1880 the French company began work on the Panama Canal. After devoting nine years and about $260,000,000 to the work, the company failed. In 1894 the company reorganized, made a second attempt but again failed. In that year this company sold its concessions to the United States government. We all know what has followed. The canal now is an accomplished fact, and as a result New York City is nearly 8,000 miles, by water distance, nearer to Seattle than before.

Thus, the Pacific has successfully tapped the commerce of the Atlantic, and Alaska, the *Land of New Opportunities,* is closer to New York and Europe, by water routes, by about 7,000 miles than Seattle was before the canal was finished. This is a rolling together of geographic points which appears to make the earth much smaller. It will require considerable time to enable the people to comprehend the full significance of this wonderful transformation.

But the end is not yet. Alaska lies in the path of the Hudson's Bay route! This apparently simple statement challenges the human mind to a study of the greatest problem of the earth's transportation interests. In the high latitudes of the Hudson's Bay route, where there is but little snowfall, and where the greatest mountain summits to be scaled are less than fifteen hundred feet above sea level, the land and water distances between Yokohama and Liverpool, through Alaska and Hudson's Bay are only about half those of the present route via San Francisco and New York.

And still the end is not yet! A distant-future generation will circle the globe, or the higher latitudes of it, through what now is called the Arctic Ocean, and connect Siberia, and a still newer North, with the countries of Northern Europe, by which distances and vexatious altitudes practically will be annihilated. Those who may smile incredulously at this optimistic forecast should consider the effects of climate-transforming forces which rise in the world's great equatorial oceans.

The two great thermal currents which originate, respectively, in the Gulf of Mexico and the Indian Ocean, with their accompanying warm atmospheric tides, are annually extending habitable soil and climate northward, and the human race is following this wonderful advance with the loyalty of the needle to the magnetic pole.

Alaska, then, is not only the land of new opportunities, —not only the land of promise, but a new empire of destiny —the key to the new prosperity now dawning in the United States.

The Northwest Trend of human progress, from a geographic point of view, which historically and physically has been observed for thousands of years, is in forcible application to the problem connected with the development of the far northwest of America. Indeed the whole subject of climatic influences, and natural history phenomena, considered as factors in the evolution of the human race, constitutes a large part of the natural and economic progress of the world.

Speaking generally, the trend of natural history progress, touching the changing march of soil and climate, and the advance of mankind in response thereto, ever has been in a northwest direction. This was the main channel of development from the ancient Assyrian, Persian and Roman empires to the rise of the United Kingdom of Great Britain and Ireland, and when the vanguard of civilization obtained a foothold on this continent, the course of human

THE HON. WOODROW WILSON—PRESIDENT OF THE UNITED STATES

progress found a new datum for continuing the northwest march of the ages.

Wonderful as it may appear to historical observation, it nevertheless is true that in all this progress climatic influences have combined into a dominating, directing and controlling force. Natural and economic evolution has made greater use of climatic forces than of any other agencies for the advancement of the race. As already stated, the two great, interrelated, thermal, oceanic and atmospheric currents, the one pair taking its rise in the Gulf of Mexico, the other in the Indian Ocean, acting in opposing force to Polar influences, ever since climate became the order of natural economy in our world, have ruled over all life and health-giving temperatures of the Northern hemisphere.

Coming to America, we can see that the configuration of the eastern coast line of this continent is of such a nature as to send the warmth of the Gulf Stream to Northern Europe. Cape Florida, the Peninsula of Nova Scotia and the Island of New Foundland function in this service. The tidal *bore* of the Bay of Fundy and that of the Strait of Canso give evidence of this. In addition to these land projections, which prevent the thermal gulf current from bathing and warming the northeastern coast of the continent, in its twice-daily northern flow, the Polar Stream, rolling down from Davis Straits and Baffin's Bay, hugs the eastern shores of North America, entering as a wedge between the coast and the warm, north-bound Gulf Stream, adding to the momentum which sends it to Europe.

Because of these interferences the northeastern portion of this continent, north of the State of Maine, is cold, barren and sterile. It could not be otherwise, since it is exposed to the blighting influences of the Polar Current. The exceptions to this rule are noted in the cases of Nova Scotia, and Southern New Foundland, which receive considerable tidal warmth from the Gulf Stream. Beyond

these points, however, this current exercises no force, until it strikes the western shores of Northern Europe.

Turning from the eastern to the western coast of North America, we meet with different conditions. What is known as the Japan Current, upon which the North Pacific Coast of America depends for its salubrious climate, is that part of the Indian Ocean Stream which is crowded through the passage between Asia and the Philippine Islands, and which passes along the east coast of China, until it reaches Japan, whence it is turned eastward towards the State of Washington, British Columbia and Alaska.

The whole of the south coast of Alaska, and that part of the west coast bordered by Bering Sea, receive the full benefit of this thermal Japan Current. This stream is more beneficial to the west coast of America than is the Gulf Stream to the eastern coast, for the reasons that but little of the cold water of the Arctic Ocean finds its way southward, through the narrow passage between Siberia and Alaska, while the northern portion of the east coast receives the greater part of the cold, withering blasts of the Polar Current.

It is to be noted that all the great thermal, oceanic streams of the earth naturally are accompanied by correspondingly warm atmospheric currents. It is owing to this fact that the warmth of these currents often penetrates mountain passes, traverses inlets or river valleys and basins, or prevails over great plains, for long distances from coast lines. These are a few of the fundamental principles governing climate in North America. They but briefly are referred to in this place to provide foundations for what later is to be said concerning the climate of Alaska.

Turning again to the interesting problem of the trend of human progress, and that of natural development, which ever precedes it, we are impressed with the strange fascina-

tion of what in its day was called the "Northwest Passage." In one way or another the *Northwest* ever has been the magnet attracting human aspirations. Natural history philosophy, if such a term is allowable, has even gone to the extreme of divining an imperceptible, semi-revolution of the earth from the northwest to southeast, the same being accomplished, as to its southeastern orbit, in about a million years, the return orbit, in a northwest direction, requiring a like period of time. On this wild and speculative theory, it may be supposed that the Arctic Ocean becomes the Gulf of Mexico, and vice versa in each period of a million years.

These reckless theories are mentioned here only because they serve to suggest a wonderful problem as to the ever-onward, opening course of natural resources and human developments in the *Northwest Course.* It would appear that in some way there is to be no end to process and progress in this direction. The writer has visited many Hudson's Bay Company trading posts in the far north, east and west, at which, less than three hundred years ago, there were few indications of soil upon the barren rock formations. Since the beginning of that period, and within the observations of the successive lives of the chief factors and servants of this company, soil, vegetation and forests have appeared, and now, where less than three hundred years ago, only naked rock was visible, the successors of these former traders in the far North are cutting timber, "whipping" it into lumber, and building commodious dwellings from this product. This is a most wonderful transformation.

That the continent, as to its soil and habitable capacities is extending northwestward, and has been experiencing this growth for thousands of years, there no longer is room for doubt. Scientific observations even have established the measurement of this natural, annual development. In some way the never ending procession of human progress appears to girdle the earth, always heading in a northwest

direction. It is many thousands of years since this climate-directed progress began, but it yet is in full march. Whenever the race in the vanguard appeared to be at the end of its wonderful pathway of resources, this highway of progress has opened new doors and revealed new fields of industry, just beyond existing human endeavors. But the geographic course never is changed.

That there is rising a habitable land of plenty just beyond Alaska there can be no doubt. History declares that even before the natural resources and riches of this great new land of Alaska are fully explored and developed the "Newer Canaan" will appear. Nature is sure to maintain a strong lead over purposive human industry, ever providing new fields for conquest. The race need feel no anxiety on the score of exhausted resources. There is the evolution—the growth and unfoldment of the earth—in some way not yet fully apprehended by man, which cannot fail in its seed-time and harvest. There is the procession or evolution of natural resources as well as that of human progress, and, until human understanding is unfolded to comprehend the problem, as yet unsolved, humanity confidently may forge ahead in a Northwest direction, just as it has done for many thousands of years of its past, feeling assured that new fields of natural bounty will ever and anon open to it, a few points north of the always rising and never setting sun of human advancement.

It is true that not until very recently have the people of the United States acquired any considerable knowledge of the North country. During the period of Russian occupancy of Alaska, only the Russians and the Scotch knew anything of the far North and its resources. The latter, as officers and traders of the Hudson's Bay Company, the trading posts of which extend above and below the Arctic Circle, and throughout the sub-Arctic regions, from the North Atlantic to Alaska, had gained a wide experimental

knowledge of the land; while Russians, occupying military and missionary posts in Alaska, as well as those engaged in the fur and seal trade, became acquainted with its wonderful phenomena.

Hence, the "Seward Purchase" was either ridiculed or allowed to pass unnoticed in this country. Nevertheless, the people began to be attracted to the new Territory by the discovery of gold in great quantities in the adjoining British Territory of Yukon, in 1897. Soon after, important precious metals discoveries were announced in Alaska proper. It was then that the material development of the new country began in earnest. A splendid record of progress had been achieved by the close of 1913, the details of which are given elsewhere in this volume.

Now, in a great measure, what are called the "drawbacks" of Alaska are in reality the guarantees of its future greatness. This particularly is true of its so-called "severe" climate. History shows us that the highest northern latitudes, wherever Christian civilization prevails, have developed the most advanced races of mankind, and this is true in respect of the mental, moral, physical and material aspects of human industry. That the millions who, in a near future generation will occupy the newly up-lifted land of Alaska will present a higher type of manhood and womanhood than America has yet given to the world, there need be no doubt.

Not only may this be expected, but the ground-work upon which Alaskan society, morally and economically, is being constructed presages a far more satisfactory social state than now exists in any of the states of the Union. The great interest of transportation, and the traffic trade, which are foundational institutions in any new country, happily have become the charge of the national government, in such a way that the railroads, as to construction, operation and management, will become and continue governmental, industrial enterprises on behalf of the people of the whole Nation.

CHAPTER II.

THE NEW ERA OF PROSPERITY.

THE DISCOVERY OF ALASKA AND ITS RESOURCES RESOLVED TO THE BEGINNING OF A NEW ERA OF PROSPERITY FOR THE PACIFIC NORTHWEST—THE COMING SUPREMACY OF THE PACIFIC—COMMERCIAL IMPORTANCE OF THE UNITED STATES ON THE EVE OF GREAT INCREASE—NEED OF A STRONGER PACIFIC NAVY—NEW NATIONAL GOVERNMENT REQUIREMENTS.

THIS new volume, by its title, is significant of a discovery of far greater importance than that of Alaska itself.

Bering, the Dane, acting in obedience to the orders of Peter the Great of Russia, discovered this *Great New Northland* early in the second quarter of the Eighteenth Century. This may be called the first discovery of Alaska.

Speaking figuratively, Alaska may be said to have been discovered a second time, when, in 1867, this Wonderland passed, for a money consideration of only $7,200,000, under the protection of the flag of the United States, by what historically is known as the "Seward Purchase." It certainly was discovered a third time, by the whole world, in 1897-98, when phenomenally rich gold deposits were uncovered in the bottoms and valleys of its creeks and rivers and upon its rugged mountain slopes.

But its real discovery was not achieved until 1914, and not heralded until the appearance of this work. This fourth, and most potential of all the aspects of the discovery of Alaska, now awakens the consciousness of mankind to a knowledge of the notable fact that Alaska

is the land of destiny,—that its development so grandly begun in 1914, speedily is to realize for this nation,—for all its people, and particularly for the Pacific Coast States, *a grand new era of material, physical, mental, ethical and socially economic prosperity.*

Alaska is to become great by making the nation of which it constitutes more than a fifth part grandly greater.

By what we properly may call Divine Providence, and the instrumentality of a wise Federal Government, Alaska and the Panama Canal are made to join their forces and uses probably to achieve for the Pacific Ocean supremacy in and over the world's commerce.

The evolution of these achievements cannot fail to transform the economic status of the United States from discord to harmony, and from a condition of augmenting poverty, and want, in many quarters, to a state of peace and prosperity in all sections of the country and among all classes, provided a skilful administration of government controls the progress.

Equally with the great interests of climate, soil and general resources of Alaska, the surpassing problems of transportation and commerce naturally rise into view to challenge the attention of the people of America, Europe and the Orient. The new development of this north country surely will signally increase the commercial importance of the United States, and this view of the subject is emphasized by the fact that the opening of the Panama Canal to the commerce of the world occurs simultaneously with the new opening of Alaskan resources to the markets of all nations. The new program of internal transportation for Alaska, both by rail and river routes, greatly increasing, as it must, mining, agricultural, fishery, lumber and other industries of that great Territory, will correspondingly augment ocean traffic to and from

this vast Northland, with other parts of the United States; between America and Europe, on the one hand, and between America and the Orient on the other.

This new movement naturally will multiply the number of ships and increase the tonnage of the merchant marine of the United States. This sudden growth of coastwise and international commerce will advance our nation from the position of a western outpost of civilization to a central place among the great industrial and commercial powers of the earth.

The student of commercial and industrial economy, holding to a world viewpoint, at once will see in this new development, an early transformation in the present status of Pacific Coast cities of America, notably in that of Seattle, the natural gateway to Alaska, and other Puget Sound centers of population, as well as the industrial and business centers along the coast, southward. It is not so much, if at all, that the Atlantic seaboard of the United States will suffer a decline, or falling off, commercially, in importance, but that, because of the wonderful natural resources of Alaska and the North Pacific country, generally, and the universal trend of empire westward, the Pacific Coast region named, quickly will enjoy a rise in these respects, and assume a leading place among the maritime countries of the world.

As this new progress advances it will be seen that the potential item of $35,000,000 tentatively appropriated by the Congress of the United States, for the construction and installation of one trunk line of railway from the interior to the south coast of Alaska, to start the flow of Alaskan products to the hulls of ocean tramps at Prince William Sound, soon will come to be regarded as but the initial sum of many hundreds of millions of public and private money, which will be expended in a similar manner. This growth of inland development and transportation with a corresponding augmentation of ocean traffic, rising because of it, very soon will enlarge the commerce of the

Pacific, and elevate its more favored ports, such as Seattle, to marts of wealth-producing trans-shipments, in the work of supplying transcontinental railway lines with freights for eastbound distribution. It also will multiply the traffic of the Pacific to and from China and Japan, and provide an important adjunct to the stream of commerce from the North Pacific to the Pacific entrance of the Panama Canal. In short, this new opening of Alaska is first and foremost a great commercial question,—one which is to change the trend and complexion of a large part of the commerce of the whole Western, and far Eastern world, and which is greatly to enlarge it. The evolution of oceanic commerce provides us with a history of the development of naval armaments. It is significant that the measure of commercial supremacy of a nation nearly always has depended upon the naval prowess of the country enjoying it. The commerce of the Atlantic and its immediate connections, which is a growth from far Eastern waters, in the westward march of progress, by its naturally interrelated rivalries produced many wars, and impressed Western Civilization with the imprint of commercialism, to the extent that in Europe and America, we find the institutions of these continents wearing vestures of commercial economy.

It only is since the beginning of the industrial age proper, not far from the middle of the Nineteenth Century, that the aspects of industrial economy may be observed as finding place in the different phases of the advancement of Western mankind. This advent, as students of current history plainly see, is giving rise to new social and political requirements, and pushing human genius to the work of discovering new opportunities.

In America and as an effect of prior evolution and progress, two great problems practically compound into one, to tax governmental policies. These are the commercial and the industrial elements of civilization; and they are the two most powerful forces at work in our national

evolution. They are as inseparable as dominant. The marvelous growth and expansion of productive, or creative industry, are developing new problems of social science, until thinking people begin to realize that there is rising the diplomacy of *home rule,* quite as important as the broader international school, and as completely interrelated with it.

Here in the far West of the Western World, we can see that, as Alaska and the Panama Canal are newly opening their gates, under the auspices of the national government, to welcome and assist in the transition of the commercial supremacy from the Atlantic to the Pacific, policies of governmental regulation are confronted with both commercial and industrial elements of human economy, in wonderfully new aspects.

These appeal in about equal force for a more effective and comprehensive administration of government at home, and a stronger, and, possibly, a wiser management of our international interests. It may be well said that no nation is authorized to forcibly carry its flag abroad, in the interests of civilization, until it has developed domestic and social harmony, and a high degree of industrial peace and prosperity within its own borders. Inequities of internal regulation generally create international unrest. Peace within is the only sure guarantee of external harmony.

Until now the United States has not been the storm center of international conflicts, incident to the evolution of world life, to any great extent. Our nation, as stated, hitherto has been in the attitude of a western outpost of marching progress, but the period has come when the Pacific Ocean begins a great campaign of commercial rivalries, which, in the very nature of progress must attain world supremacy. Hence, this nation gradually will assume a central place and function in world affairs.

For this reason, and until better guarantees of world peace are secured, its navy, especially on the Pacific, must grow more rapidly, in order that the swiftly augment-

ing commerce of this great ocean shall become more generally characterized by the Stars and Stripes. Figures talk badly for our merchant marine, when they speak in any interrelationship with competing nations. The national vision in the United States should be turned towards the Pacific Ocean, and steadily held to that focus, because it is upon the bosom of its waters that the peaceful rivalries and naval conflicts of the future are to be waged and concluded. The onward march of civilization, in making passage from America to the Orient to transform stagnation into new life there, will find its field of contest on the Pacific, and, that transformation finally will mold the destiny of this nation. The first step in governmental duty in this country, therefore, is the establishment of a more harmonious industrial economy within our own borders; and, the new opening of Alaska to the industry and commerce of mankind provides this nation with one great instrumentality to the realization of this much desired achievement.

As will be seen in later elaborations on these pages the Federal Government is preparing a strong program for the development of Alaska and the regulation of its industries and commercial interests. In this the vigor and genius of Secretary of the Interior Franklin K. Lane, plainly are manifested. The guiding hand of President Wilson also is visible. All in all the situation may be regarded as the beginning of an important new era in the development of Alaska, the Pacific Northwest, and the United States as a whole.

CHAPTER III.

VALUE OF ALASKA TO THE UNITED STATES.

BRIEF SUMMARY OF NATURAL RESOURCES—MINERAL WEALTH —VAST AREA—GOLD, SILVER, COPPER, COAL AND OTHER DEPOSITS—FISHERY RESOURCES—THE WEALTH ALREADY PRODUCED—A FIRST SHORT VIEW OF THE GREAT COUNTRY.

THE value of Alaska as a vast wealth-producing area, to the people of the United States and to the world, constitutes one of the newest and greatest resources. In land area the Territory is equal to one-fifth of continental United States, or twelve times that of the state of New York. Its production of gold for the year 1912, according to official reports was $17,398,943, and the estimate for the year following, although under somewhat adverse circumstances, was $15,450,000. In 1912, the gold output of the state of California was but $19,928,500.

A few words in this place as to the reasons for the decline in the precious metals output, as estimated for 1913, are due. It will be remembered that the season for the year named was excessively dry. Gold miners, for the greater part were reduced below a half needful supply of water, and were, therefore, unable to maintain the average increase. The falling off is not due to scarcity of gold, nor the failure of the gold resources of the country in any respect. The estimated yield of silver for the same year also was $90,839 less than that of 1912. The copper output fell off by $1,809,131, but this is almost wholly due to

the destruction of the extensive copper mining plant at Kennicott, by fire in that year.

Although copper mining in Alaska is but begun, the per capita copper output already is equal to that of Montana. Reliable statistics show that it has valuable coal areas much greater than those of Pennsylvania, and arable lands of greater extent than the State of Oregon. "Tin, iron, gypsum and oil are found in commercial quantities, and its marble quarries rival those of Vermont."

Among the more unique features of Alaskan development is the reindeer industry, started in 1902, with 1,280 head, which has grown to forty-seven herds, numbering 38,000 head. This industry already is a valuable source of future food supply.

The undeveloped water powers of Alaska exceed the available supply of the Pacific Coast states, and, for the greater part are so distributed as to accommodate natural industrial centers.

The area of Alaska is 586,400 square miles. This is 190 square miles greater than the combined area of the states of Michigan, Kentucky, Tennessee, Indiana, Ohio, Vermont, Maine, Maryland, Rhode Island, North Carolina, New York, Virginia, New Hampshire, South Carolina, Massachusetts, Connecticut, Georgia, New Jersey, Pennsylvania and Delaware. It is greater than the combined area of Norway, Sweden, Finland, England, Scotland and Ireland; or that of Germany, France and Spain.

"Here we have," writes Captain R. H. Stretch, in a pamphlet issued by the Seattle Chamber of Commerce, under the direction of J. L. McPherson, chairman of the library committee of the Alaska Bureau of that organization, "an area covering twenty states of the Union, which extends from the winter resorts of Florida, to within a few miles of the St. Lawrence River and Quebec, where navigation is closed in winter, and from the shores of the Atlantic to the Mississippi River. If the map of Alaska is

placed over that of the United States, with Ketchikan in Alaska on Jacksonville, in Florida, the western island of the Aleutian chain will be found at Santa Barbara in California. From south to north it extends over one thousand miles of latitude from Mexico to the Canadian borders; and from the east to west over two thousand five hundred miles of longitude. To generalize on the climate and possible resources of such a diversified region is impossible, if it is wished to convey any idea of how it should be developed, just as would be any equal area between the Mississippi and the Atlantic, with all kinds of climate; vast plains and rugged mountains; producing timber in some sections; cotton, sugar and tobacco in others, and diverse commercial interests. Such a region must be divided into districts of similar products and requirements, and so it is with Alaska." The climate of Alaska is considered at length in other chapters of this volume.

The value of the gold and silver deposits in Alaska, as well as that of the copper, tin, coal and other minerals and non-metallic minerals have long since attracted the attention of the civilized world. Their great riches are only beginning to be known.

The fishery resources, and the industries connected therewith, are assuming vast proportions. In 1912, the fishing output had reached the value, for that year, of $17,391,578, and for the whole period since 1867, $167,420,-118. The future development of these industries is susceptible of great possibilities.

The immense herds of seals which annually resort to the Alaskan jurisdiction of the Bering Sea Islands are estimated to contain from 220,000 to 225,000. This industry, now conducted under the direct management of the United States Government, realizes nearly $400,000 annually, and provides for such protection to the herds that, in the course of time, their numerical strength of four to five millions may be restored.

It is true that the number of fur-bearing animals in Alaska is now much smaller than in the days of Russian occupation, but the fur industry in 1912 yielded $370,519. The total value of the fur output since 1867 is $22,216,872.

But, second only to the precious metals value of Alaska to the United States, if indeed, at a later date it may not become the foremost industry, is that of agriculture. It is estimated that 100,000 square miles of the Territory are available for arable or grazing land. But, as will be seen in another part of this volume, natural process and progress are at work, rapidly improving soil and climatic conditions in Alaska, so that within a generation or two, the cereal capacities of the Territory will have become much greater. There is the evolution of soil and climate in Alaska, which is moving with greater speed than in the older portions of the continent, and this is true of the whole northwest country. The magnificent vegetable crops obtained nearly everywhere in the Territory presage future cereal possibilities. Already oats, barley and rye are produced in abundance at the Experimental Stations.

Wild and cultivated fruits abound, or are grown, and fully twenty-seven per cent of the total area of the country is devoted to forests and woodlands. Over 30,000 square miles are estimated as containing timber suitable for manufacturing purposes. Wild game, consisting of moose, mountain sheep, mountain goat, deer and caribou abound, while brown or Kodiak bears are plentiful.

Birds, flowers and scenic attractions are abundant, and so are insects, the latter, as almost everywhere, to the annoyance of the inhabitants.

Already, with a population, in 1910, of only 64,356, the Territory boasts a number of growing, prosperous towns, among them, Ketchikan, Wrangell, Juneau, Douglas, Treadwell (the last three practically one community), Haines, Skagway, Cordova, Valdez, Sitka, Seward, Nome, Fairbanks, Iditarod City, Ruby City and Eagle City.

The matters of transportation, including railroads, wagon roads and trails are considered in another part of this work at some length, since they constitute the great interest upon which old Alaska turns into a new era of progress in 1914. The vast mineral and non-metallic mineral wealth of the Territory is further considered on other pages.

Such is Alaska, a frontier land of wonderful resources, which passed to the jurisdiction of the United States in 1867, at a cost of $7,200,000, and upon which the national government has since expended about $25,000,000, over and above the revenues collected on its account. In response to this outlay of the United States, Alaska has yielded a profit to the nation of practically $438,000,000 in considerably less than half a century of pioneer progress. But this gain is slight indeed compared to the many, many billions of wealth which lie in almost plain sight in that country, awaiting only the forces of capital and human skill for development.

Since 1867, and up to the close of 1912, and for the far greater part, within the last fourteen years, Alaska has made return to the United States, as shown in the reports of the United States Geological Survey, Director of the Mint, and other official documents, as follows:

Gold	$212,765,727
Silver	1,841,202
Copper	13,570,225
Coal	347,389
Other minerals	982,554
Fisheries and Furs	240,820,168
TOTAL	$470,337,265

In 1912 Alaska produced:

Gold, silver and copper	$22,285,821
Other minerals	252,000
Fish and furs	18,120,132
Miscellaneous	394,046
TOTAL	$41,051,999

PANNING FOR GOLD NEAR FAIRBANKS, ALASKA
Photo by F. H. Nowell.

THE BONANZA COPPER MINE AT KENNECOTT, ALASKA

The commerce in Alaska in 1912 was:

Imports	$22,917,795
Exports	42,278,546

But in order to convey to the reader anything like an adequate idea of the value of Alaska as a wealth producing country, one must consider its resources under a proper classification, and in more extended elaborations. These here follow.

CHAPTER IV.

VALUE OF ALASKA — GOLD.

MINERALS OF ALASKA—DISCOVERY AND DEVELOPMENT—GOLD OUTPUT TO DATE—HISTORY OF PROSPECTING—THE TRAIL MAKING PERIOD—MINING CAMPS THE BEGINNINGS OF CITIES—PLACER MINING THE POOR MAN'S METHOD—PRECIOUS METALS DISCOVERIES STILL IN PROGRESS.

SO far as discovery and development have gone, the chief mineral products of Alaska are gold, copper and silver, in the order of importance named. From 1867, to and including 1912, (and by far the greater part since 1899) the total gold output has been $228,512,471; that of copper, $16,074,625, and that of silver, $2,037,280. Of the non-metallic minerals, coal, of course, so far as discovery has gone, is the chief product, with an output of $347,389 up to 1912. This industry is susceptible of vast proportions, as we shall see on the following pages.

From available data, it may be stated that the earliest recorded discoveries of gold in Alaska, in anything like paying quantities, were made in widely scattered locations, and were quartz lodes, not placers. The Apollo Mine on Unga Island, off the western shores of Alaska, probably was the first of these discoveries. The mines at Juneau, found in 1880, were followed by the find at Forty Mile on the Yukon in 1886. In 1894 Circle City became a placer camp. In 1896 the mines at Kenai came into notice, and in 1897, the wonderful Klondike placer discoveries were announced. These startled the world, and since that date

Alaska has held the attention of a great portion of mankind.

"Prospectors, pushing out from the Klondike in search of new fields, hit upon the great discovery at Nome in 1898. In this and the following years, many found their way to Nome by way of St. Michael, and as this camp became crowded, the enterprise of these hardy gold seekers was rewarded at Rampart in 1898; at the Hot Springs in 1899; at Fairbanks in 1902; at Bonnifield in 1903; at the Kantishna in 1906; at Innoko in the same year; and at Iditarod in 1907. In the latter years gold was also discovered at Ruby City on the Yukon, below its junction with the Tanana. Prospectors from Forty Mile found the Chandelar in 1899, and those from Iditarod, the Kuskokwim in 1907."* Those who made their way to the Klondike by way of Valdez found gold in the Copper River Basin, on the Nizina, Chisna and Chistochina in 1902, and at Valdez Creek in 1903.

Others penetrating the but little known southwestern region traced the gold belt to the Iliamna country and Mulchatna River in 1907, and about 1910 discovered Good News Bay on the shores of Bering Sea; while prospectors from Seward Peninsula found Squirrel Creek, a branch of the Kobuk River, in 1909. We are to learn from this succession of recent gold discoveries that, withal, we know but little of what the future has in store for even the present generation in Alaska. "These localities," says Capt. R. H. Stretch, "are widely scattered and far apart, but each discovery forms a settlement and a base of supplies for the prospector, enabling him to travel farther and farther into regions yet unknown. Of but a small portion of the territory have we any detailed knowledge; the larger part by far is the domain of the prospector, and by him only a fraction has been traversed." The remainder may reveal sources of wealth not yet imagined.

---

* Geological Report. Captain Stretch's Pamphlet, 1912.

The period here so briefly sketched may be regarded as the trail-making one of these hardy, daring pioneers; and, as already seen, many of these adventurous paths become established highways of later travel. This is a matter of pioneer history repeating itself in one new territory after another in the development of our whole country.

It is not the purpose to enter, in this place, upon an account of mining development in Alaska. I have given in figures the results of this industry to date. These mark only a beginning, but they constitute a splendid start,—one which places Alaska in the list of the great national resources of the United States.

The locations of the principal mining centers now may be regarded as the beginnings of future cities, some of them already assuming considerable commercial importance. Speaking in this behalf, a valuable contribution to Alaskan literature, edited by Captain R. H. Stretch, of the Alaska Bureau of the Seattle Chamber of Commerce, says: "Practically all of the locations of the principal mining centers are found in broad belts of slaty and micaschist rocks, outcropping on both the southern and northern foothills of the great Alaska Range, and the Endicott Mountains, the bounding walls of the Yukon Valley being apparently the most productive. The southern slopes of these mountain ranges have furnished the camps in Copper River Valley, and the placers of the Koyokuk, Chandelar and Squirrel Creek, which have held second place to those on the slopes facing north. Here the immigration through Dawson found Fairbanks and its tributaries, from which point prospectors drifted west and south, finding in natural succession Bonnifield, Kantishna, Innoko and Iditarod, each discovery made possible by the previous one. Each of these camps furnished a base of supplies for the prospector, and resulted in the recent discovery of Ruby City, Fox Creek and Aniuk, each of which is likely to result in further extension of the gold-bearing area.

In like manner, prospectors from Kenai found the Susitna, and following up its branches, radiating like the fingers of the hand, have been steadily pushing on into the unknown. So, also, from Nome as a base, the circle of known area spread until it has reached the Kobuk beyond the Arctic circle; and all these discoveries have been made by a mere handful of men, plunging singly or in pairs into the wilderness, to be lost for months to their friends and acquaintances."

The following table of the progress of discovery, year by year, in Alaska, derived from the same source and from the Geological Reports, illustrates this progress, and to some extent, provides a guide to the future:

1880—Juneau, resulting in discovery of the quartz mines.

1886—Forty-Mile, from which point prospectors found the Klondike.

1890—Or thereabout, gold found on the Koyokuk.

1894—Circle City and Birch Creek, from Forty-Mile base.

1896—Kenai Peninsula, a new base of operations.

1897—Nome, Eagle and Rampart, from overflow of Klondike rush.

1898—Yakataga beach, result of Nome beach discoveries; Willow Creek, expansion of Kenai center.

1902—Nizina, Chisna and Chistochina.

1902—Bremner from Nizina center.

1902—Fairbanks from Eagle center; Kobuk from Nome center.

1903—Valdez Creek from Kenai center; Bonnifield from Fairbanks center.

1904—Yentna by prospectors from Kenai.

1906—Kantishna by prospectors southwest from Fairbanks; Innoko by the same.

1907—Kuskokwim from Innoko; Squirrel Creek from the Kobuk center; Iliamna, Mulchatna, Tacotna, on new route from Kenai.

1908—Iditarod from Innoko.

1910—Good News Bay from Mulchatna.

1911—Ruby City by overflow from Iditarod; Aniuk by overflow from Iditarod.

1912—Fox by overflow from Iditarod.

Thus, in a nutshell, we have the skeleton of the history of Alaskan discovery and progress, so far as gold mining is concerned. But, as to the development of individual mines, there is not space within the limits prescribed for this work in which to present an account.

As to the gold quartz mines of the southeastern district, extending from Ketchikan to Berners Bay, a distance of 300 miles, operations prevail on the islands as well as on the mainland, "but they reach their maximum development on Douglas Island and Juneau, where the group of four mines, collectively known as the Treadwell Mine are located, and on which 900 stamps are employed," capable of crushing about 5,000 tons a day. It is said that this mine has produced 90 per cent of the quartz mining output of Alaska up to this time.

Concerning these mines, the consensus of authorities say: "The enormous dimensions of the ore bodies and the success attained in the mining and reduction of their low grade ores have made these mines classic. As a sample, the results of the operations of these mines from 1882 to December, 1912, are given below:

Tons mined	21,571,093
Total value	$52,972,292
Average yield per ton	2.46
Cost of mining and milling per ton	1.48
Profit per ton, 40 per cent	.98

These mines now have obtained a depth of more than 1,800 feet." Quartz mining in the other districts is yet in

its infancy, but considerable progress has been made. The prospect is good.

As is well known, placer mining has achieved the far greater success in Alaska. It is the poor man's method of obtaining gold from the earth. It is a process of separating particles of gold from sand or gravel, with which they are mixed, by washing the gravel in moving water, the lighter material being carried away, and the heavy gold remaining. "In its simplest form, the outfit of the prospector comprises a pick, a shovel, a large flat sheet iron pan, an iron constitution and an unfailing fund of hope and patience."

In the second stage of placer mining a "rocker" is used, which is merely a screen on the top of a box, to separate the coarse gravel, while the finer material drops on a sloping board, or apron, where by rocking the box sideways, the gravel is cleaned and passes over a lip at the lower end of the apron, which retains the heavier gold.

In larger surface operations the gravel is shoveled into a long sluice-box, lined on the bottom with riffles, and set on a grade with abundance of water, known as a sluice-head. This plan requires considerable room at the end of the sluices in which to take care of the tailings.*

"Where the body of gravel is not deep it may all be washed away to reach the richer material in the bottom of the valley trough, which is called the pay streak. If the ground be too deep, shafts are sunk to bedrock and the pay dirt excavated as in coal mining, hoisted to the surface and washed in the usual way. This is called drift mining. In all these hand operations only the cream of the deposit can be removed, as the cost is high, so that large bodies of low grade gravel are left untouched.

"When conditions admit the use of water under pressure so that it can be used to tear down the bank and

* Geological Reports. Other reliable reports. Captain Stretch's Pamphlet.

drive the gravel into the sluice boxes, this method is called hydraulic mining, and gravel of much lower value per yard can be handled profitably as the water takes the place of high-priced human labor. It is evident, though, that there must be much more dump room for the waste, and flat regions cannot give pressure to the water.

"In such cases, or where the ground cannot be drained, resort is had to dredging, which can be carried on either in open water or at any point where water can be had in sufficient quantities to make a pond in which the dredge can float; the dredge being nothing more than a barge with machinery in front to scoop up the gravel, which, after washing, is dumped overboard at the stern by an endless belt on an elevator or stacker, as it is sometimes called. It is plain that the capacity of the dredge is limited only by the depth to which it can dig, and the size and number of the boulders in the gravel on the bedrock where the best pay is found. For these reasons, on some of the creeks around Fairbanks the depth of muck and worthless material is too great for dredging operations, while the Nome peninsula, the Iditarod, Circle City, Eagle and Forty Mile regions, as well as the Kenai Peninsula are well suited to their use. The report of the U. S. Geological Survey gives the number of dredges in use in 1912 as: Seward Peninsula, 33; Forty Mile, 3; Fairbanks, 1; Birch Creek, 1; Iditarod, 1, and the Kenai Peninsula, 1."

Hydraulic plants are in use on the Nome Peninsula, in the Copper River Valley, and in the Kenai-Susitna, Circle and Forty Mile districts.

The Geological Survey estimates the number of yards of gravel moved in Alaska, and the approximate value of the same, as follows, which apparently include all methods:

1908—Cubic yds. moved	4,275,000	Av. value per yd.	$3.74
1909—Cubic yds. moved	4,418,000	Av. value per yd.	3.66
1910—Cubic yds. moved	3,800,000	Av. value per yd.	3.20
1911—Cubic yds. moved	5,790,000	Av. value per yd.	2.47,

from 650 operations in 1910 and 740 in 1911; while the average value per yard of similar work in California is estimated at only thirteen cents.

Additional rich, gold-bearing gravel beds were discovered in 1913 near Fairbanks, on Fairbanks Creek, and the Chatanika Flats. Indeed, new discoveries in many sections are being located in the proportion that prospecting and discovery work is pushed forward.

Following is the new law governing the location of placer claims, of 1912:

"Be it enacted, etc., that no association placer-mining claim shall hereafter be located in Alaska in excess of forty acres, and on every placer-mining claim hereafter located in Alaska, and until a patent has been issued therefor, not less than $100 worth of labor shall be performed or improvements made during each year, including the year of location, for each and every twenty acres or excess thereof.

"Sec. 2. That no person shall hereafter locate any placer-mining claim in Alaska as attorney for another unless he is duly authorized thereto by a power of attorney in writing, duly acknowledged, and recorded in any attorney's office in the judicial division where the location is made. Any person so authorized may locate placer-mining claims for not more than two individuals or one association under such power of attorney, but no such agent or power of attorney shall be authorized or permitted to locate more than two placer-mining claims for any one principal or association during any calendar month, and no placer-mining claim shall hereafter be located in Alaska except under the limitations of this act.

"Sec. 3. That no person shall hereafter locate, cause or procure to be located for himself more than two placer-mining claims in any calendar month; provided, that one or both such locations may be included in an association claim.

"Sec. 4. That no placer-mining claim hereafter located in Alaska shall be patented which shall contain a greater area than is fixed by law, nor which is longer than three times its greatest width.

"Sec. 5. That any placer-mining claim attempted to be located in violation of this act shall be null and void, and the whole area thereof may be located by any qualified locator as if no such prior attempt had been made."

CHAPTER V.

VALUE OF ALASKA—COPPER.

COPPER DISCOVERY AND DEVELOPMENT—LOCATIONS OF COPPER AND WHITE RIVERS—DISCOVERY OF THE NICOLAT MINE—THE BONANZA MINE ON KENNICOTT CREEK—A WONDERFUL SHIPMENT—THE FUTURE GREAT COPPER COUNTRY OF THE EARTH.

IT was a most important development that revealed Alaska as probably the richest copper field of the world discovered up to this time. The existence of this metal was known to the Russians for a long period prior to the "Seward Purchase." It is recorded that nuggets of native copper and small household utensils beaten out of the same were found in the possession of the natives, but the Russians did not appear to have been acquainted with the particular localities from which the metal was obtained, further than that it was somewhere in the region of the Copper and White Rivers, a section of the country wholly unexplored prior to the purchase of Alaska by the United States. The Indian word for copper is "chiti." From this we have such names as Chitina, Chititu, Chitistone, etc.

So far as known, says one report, the opening up of the Copper River Valley was the result of the Klondike excitement. Prospectors going in by the way of Valdez, remained in the valley and, in July, 1899, one of these was shown the Nikolat mine by an Indian, who found it by the aid of a map drawn by the old chief Nicolat, after whom it was named. "Situated among glaciers at the head of the Chitina River, a large affluent of the Copper, the locality was so inaccessible that the discovery was practically value-

less, as even solid copper could not be mined and taken out of the country at a profit, as the cost of transportation (up to April, 1911) was several times the value of the mineral. In the belief, however, that railroads in a few years would open up the country, the copper belt on the north side of the Chitina was prospected and located and a large amount of money spent on development over a distance of nearly 100 miles, extending from the Kotsina on the west to the Nizina on the east; and the copper belt was traced still farther to the eastward through Scolai Pass to the headwaters of the White River. Continuing in this direction, native copper is now known at the head of the Donjek (a branch of the White River), around the headwaters of the Alsek, and the belt may probably continue to the copper discoveries at Rainy Hollow, near the head of the Chilkat River, which drains into Lynn Canal. This region, which may be best known as the Copper River Belt, though part of it lies in Canadian territory, roughly parallels the coast line of the Pacific Ocean, and approximately 100 miles inland, and lies to the north of the St. Elias range and the Chugach Mountains."*

It is noted here that in 1899 the Geological Survey, examining the head of the White River, reported a copper belt, similar to that just described, following the northern slopes of the Wrangell Mountains, and bounded on the north by the Tanana River, just as the belt already spoken of follows the southern base of the same range. This region is called the Tanana-Nabesna Belt, so called, owing to the names of its two most important streams. It lies about 200 miles, in an air line, southeast of Fairbanks, in the Tanana Valley. Its development can only rise through the extension of railroad facilities, as the Upper Tanana is not a navigable stream.

Although these two copper belts had been quite fully prospected, no copper was shipped until April, 1911, on

* Compiled from the Geological Reports and other reliable sources.

which date the Copper River and Northwestern Railroad was completed to the Bonanza Mine on Kennicott Creek, 196 miles from Cordova, its ocean terminus, and over 1,000 tons of copper ore, having an approximate value of $250,000, was sent out on the first train as an earnest of future production. These shipments were interrupted until 1913, owing to adverse conditions, noted elsewhere in this volume, when traffic and mining operations were profitably resumed.

"It is only the extreme richness of the Bonanza ores containing some 1,300 pounds of copper to the ton (sixty-five per cent) which has made their shipment profitable. How the opening up of this rich deposit affected the production of copper in Alaska may be judged from a rise in the value of the copper output from $588,897 in 1910, to $4,600,000 in 1912."

Discoveries at Prince William Sound followed, extending the valuable copper finds of the Territory. The Geological Survey in 1908 mentions the occurrence of copper at the Galdhaugh Mine, and also at Land-Locked Bay on the mainland, as well as on Bligh, Latouche and Knight Islands. The Ellamar Mine is said to have been known in 1895, but was not located until 1897, at which time the price of copper rose to twenty-five cents a pound, and caused the location of every outcrop then known. Shipments from the region have steadily increased. This belt is separated from the Copper River by the Chugach Mountains and the Valdez gold belt.

In the Knik region copper was reported in 1906, occurring under similar conditions to those existing on Prince William Sound; and prior to 1908 numerous locations were made on the east side of Resurrection Bay on the Kenai Peninsula, and on the south side of Turnagain Arm native copper was found in the sluice boxes of the hydraulic miners, which resulted in the exploitation of a vein carrying sulphides, with unknown results. The whole coastal region may be appropriately called the Prince William

Sound Belt, and is characterized by the yellow copper-sulphide ore, the high grades of the Chitina being absent.

The southeastern belt, on Prince of Wales and adjacent islands in the Alexander Archipelago, is the only other important locality in Alaska, standing third in the list of annual production, although up to 1908 it held first place, a position usurped by Prince William Sound in 1908 and by the Copper River Valley in 1911. The mines lie just west of Ketchikan and are clustered around the little towns of Hadley, Sulzer, Dolomi and Niblack. The district lies on the direct route to Juneau and Skagway, and as a natural result many locations were made on its mineral deposits as early as 1900 and 1901. Development progressed slowly until the high price of copper from 1905 to 1907 made low-grade ores available, and production reached its maximum in the last named year, when copper was quoted at twenty-five cents per pound. With the sudden drop that ensued, production fell off rapidly. The higher price of copper in 1912 has had a stimulating effect.

Copper mining development in 1912, as noted in the Geological Survey, deserves attention in this place, as follows:

Chitina Valley.—"At the east end of the field work was continued on the Mother Lode, Nikolai and Westover properties, and also on a property located on an island in the Kennicott glacier. Prospecting and development were especially active in the vicinity of Kuskulana River. Here the largest operations were those of the Great Northern Development Company, which completed about 5,000 feet of development work. The Alaska-Consolidated Copper Company carried on development work on Nugget Creek and on the Rarus group of claims. The Alaska United Copper Exploration Company continued work on the Blackburn group located on Porcupine Creek. In addition to the above, a large number of claims were opened in the Kuskulana region during the summer. This field is now

readily accessible from the railway, and a branch has been surveyed which would permit the shipment of ore."

Prince William Sound.—"The Ellamar, Three-man, Latouche and Land-Locked Bay Copper Companies were shippers (and were joined in 1913 by the Fidalgo). Development work was carried forward on a large number of other claims, some of which promise to become shippers at an early date. A notable advance was that made on the Solomon Gulch properties near Valdez."

Southeast Alaska.—"The Jumbo and Rush & Brown Mines were the only considerable shippers. The Mt. Andrews Mine was idle most of the time, but plans have been made for its reopening and systematic development; and such was the case with the Copper Mount Mine."

Tanana-Nabesna.—There was some activity in the White River region in 1913, as also in the Nabesna district. Copper ore has been found in the Matanuska Valley on Sheep Mountain; also on the headwaters of the Susitna, on a tributary of McLaren River.

The copper production in Alaska from 1880 to 1912 is as follows:

	1880 to 1910.	1911.	1912.	Total.
Tons of ore mined	328,047	68,975	93,447	490,469
Tons of copper produced	16,897	13,634	14,615	45,146
Value of copper produced	$4,238,709	$3,366,584	$4,823,031	$12,428,324
Value of gold and silver	1,580,299	256,229	385,157	2,221,685
Total value of ore	5,819,008	256,229	5,208,188	14,650,009
Average value of ore	17.74	52.52	55.73	29.87

The producing mines are located as below:

	1910	1911	1912
Southeastern Alaska	4	4	3
Prince William Sound	3	3	4
Copper River Valley	...	1	1
	7	8	8

These data clearly establish Alaska as the coming great copper producing area of the world. The same may be said in respect to gold and coal.

HYDRAULIC LIFT MINING IN ALASKA
Photo copyright by F. H. Nowell.

DREDGING FOR GOLD IN ALASKA
Photo by F. H. Nowell.

CHAPTER VI.

VALUE OF ALASKA—COAL.

ALASKA COAL FIELDS—THE HIGH GRADE COAL DEPOSITS—THE LIGNITE AREAS — DESCRIPTION OF THE COAL WEALTH OF ALASKA—FUTURE CHEAP COAL FOR ALASKA HOMES AND FACTORIES — COAL PRODUCTION — DEPOSITS ESTIMATED AT 150,000,000,000 TONS.

THE coal fields of Alaska cover an enormous area, estimated by the United States Geological Survey at 12,667 square miles. They are located in many parts of the territory, from the Pacific even to the Arctic Oceans, the least attractive section being the islands of the southeastern portion of the country, where the deposits are said to be of limited extent. The deposits of a high grade character round which the recent injurious coal claims controversy centered are those in the Bering field, near Katalla, and Controller Bay, and those in the Matanuska Valley, north of Seward. A similar grade is found at Cape Lisburne, beyond the Arctic Circle, from which whaling vessels obtain their supplies, but the inaccessibility of the locality takes it out of the field of competition, for the present at least.

The remaining fields are of lower grade, commonly called lignite, but well-suited for household and general manufacturing purposes, but not adapted to the manufacture of coke, nor for smelting operations, nor for the use of naval or large ocean steamers. It is officially stated that the high grade coals are not found in Alaska, except in the fields already indicated.

From Government reports and other reliable data at hand, I present the following condensation of these coal interests:

The Matanuska field can be placed in communication with tidewater at Seward by a railroad 185 miles long, of which seventy-two miles is already constructed, as pointed out by the recent railroad commission. The Bering field can be connected with the port of Cordova, by either seventy-six or ninety miles of rail on different routes, of which thirty-eight are at present constructed as part of the Copper River and Northwestern Railway, and the remaining thirty-eight or fifty-two miles could be built in one season. If a port could be opened on Controller Bay, these distances would be reduced to about twenty-five miles. With the construction of two or more roads, both fields would be opened and supply their respective territories, as well as open markets outside on a competitive basis. Analysis of the coals in these two fields, ranging from bituminous to anthracite, shows that in quality they are equal to those of similar fields in the Eastern States.

As far as the exploitation and development of the eastern half of the territory is concerned, the immense deposits at the head of the Nenana River (Cantwell on some maps) claim attention, being close to the route of the suggested railroad through the Copper River Valley, and only about seventy miles from Fairbanks, and the Tanana River. The recent government report on this field, known as the Bonnifield, just issued, gives some astounding figures, showing in the best developed natural cross section veins, varying in thickness from one to forty feet, with an aggregate thickness of 231 feet; and in a careful summary estimates the total volume of coal in an area of 122 square miles at 9,950,000,000, or nearly ten billion tons, remarking that this quantity may possibly be only one-third of the actual amount. While a lignite, the coal is of great value on account of its accessibility to the interior and the ease with which it can be mined.

Several other fields of minor extent and similar composition occur along the upper Yukon below Eagle City. Similar fields on the lower Yukon near Nulato would become tributary to the western projected railroad, to be distributed in the mining camps of the southwest and the valley of the Kuskokwim.

Coal lands north of the Yukon may for the present be considered a negligible quantity, although in addition to the deposits near Cape Lisburne, extensive areas are known on the coast to the eastward as well as on the Colville River beyond the Arctic Circle.

Returning to the coast of the Pacific, there is a very extensive field of lignite along the west coast of the Kenai Peninsula, well shown along the shores of Cook Inlet, near the mouth of which the small towns of Homer and Seldovia are located. This field has the honor to receive the first coal patent issued in Alaska. Judging from published maps of the Geological Survey, a larger area is here underlain with coal than at any other point in the Territory, though the total thickness may not be as great. Work on the deposits has been carried on for many years, and being on tidewater the facilities for shipment are excellent. Owing to the scarcity of coal lands in California, the Southern Pacific Railroad is said to have tested the coal many years ago as a possible source of supply, but relinquished the attempt owing to the risk of field fires, from excessive sparking under forced draft. This is stated by Dall, in his report on Alaska coals, to be due to the abundance of small pellets of fossil resin with which it is impregnated. As the trouble developed under forced draft only, this fact does not appear to injure it for domestic use, "and with low freights it may still find a good market in San Francisco, which draws its supplies from England, Japan and Australia, as well as from the state of Washington."

Other deposits occur at Chignik, and at Hereenden Bay or Coal Harbor, near the western end of the Alaska

Peninsula, where quantities are mined for use in salmon canneries and fishing vessels.

"From the foregoing enumeration of localities," says Capt. R. H. Stretch, in his excellent compilation on Alaska, issued under the direction of Secretary J. L. McPherson, of the Alaska Bureau of the New Chamber of Commerce of Seattle, "omitting others of minor importance, it can be seen that every portion of the Territory can be cheaply supplied with fuel as its development demands, while the inability of the population at the present time to use these resources is resulting in the denudation of the interior woodlands at a rapid rate, and in late reports it has been suggested that all woodlands in Alaska should be placed under Government authority. The opening of the coal lands is the best remedy for this state of things. In a thinly wooded district the price of fuel must increase steadily as the nearby supplies are exhausted, while the cost of hauling cordwood equal in heating capacity to a ton of coal is several times as great.

"The production of coal in Alaska, beginning with 1,200 tons in 1899, reached a maximum of 10,139 tons in 1907, and in 1911 had dwindled to 900 tons, with a total of 36,314 tons in thirteen years, while the total consumption was 1,440,104. For 1911 the production only equaled about seven-tenths of one per cent, 900 tons out of 121,728 consumed!"

On this subject the following paragraph is taken from a general review in Bulletin 442 of the Geological Survey, relating to the coal supply of Alaska:

"In considering the foregoing it must be remembered that the estimates cover only the 1,202 square miles of coal lands, namely, that part of the coal fields which, with a reasonable degree of certainty, is believed to be underlain by workable coal beds. No allowance whatever is made for the remainder of the 12,667 square miles mapped as coal fields. * * * It is therefore probably safe to say that the minimum estimate of Alaska's coal resources

should be placed at 150,000,000,000 tons, and that the actual tonnage may be many times that amount. These figures indicate coal resources far in excess of the original coal supply of Pennsylvania. It must be remembered, however, that over half the Alaska coal is lignite, while all of the Pennsylvania coal is of high grade."

It must not be inferred, however, from the above statement that these lignites are valueless. They form a very large part of the world's supply for all uses except some special industries, and the world would be cold without them.

Finally, however great may be the estimated tonnage of coal in Alaska, and its estimated money value, it is not worth the price of a cold breakfast on a frosty morning unless it is worked and marketed.

CHAPTER VII.

VALUE OF ALASKA—FISHERIES.

VAST FISHERY WEALTH OF ALASKA—STATISTICS FROM THE REPORT OF THE DEPARTMENT OF COMMERCE AND LABOR—THE MOST EXTENSIVE COD FISHERY BANKS IN THE WORLD—EXTENT OF THE PRESENT INDUSTRY—VARIETIES OF SALMON.

AS already stated, the total value of the fishery output of Alaska in 1912 was $17,391,578; that of the whole period up to and including 1912, is $167,420,188. Thus, it is seen that the fishing industry of the Territory is assuming immense proportions. The year 1912 shows a substantial growth over the previous year. This is shown by the report of the Department of Commerce and Labor, from which I condense the following summary, conforming to the contents of a pamphlet on Alaska issued by the Seattle Chamber of Commerce: Twenty-six new salmon packing establishments were built in 1912, while large additions have been made to the fleets engaged in the deep sea and whaling industries.

The salmon industry now extends from Ketchikan in Southeast Alaska, for a distance of 2,000 miles, following the general course of the shoreline, to Bristol Bay in Bering Sea, and at this time an unknown distance beyond, but not less than 800 miles, both on the mainland and the larger islands.

Official data further shows: "Five species of salmon are used commercially, known respectively as Coho or silver, dog or Chum, Humpback or pink, King or spring and red or Sockeye. Of these, the King is especially

valuable on account of its large size. It often attains a length of four feet and a weight of more than thirty pounds. The Sockeye is highly esteemed on account of the deep red color of its flesh. This many people consider essential to a good fish. The halibut fishery is carried on mostly off the shores of the islands of Southeastern Alaska, the headquarters being at Ketchikan and Petersburg."

The codfish banks are located along both the north and south shores of the Alaska Peninsula, the curing stations, to the number of fourteen, being on the Shumagin and adjacent islands. These fishing grounds are said to be the most extensive in the world. The catch will be limited only by the demand. Two years ago ten vessels of an aggregate tonnage of 2,477 tons, sailing from Puget Sound and San Francisco, were engaged in this industry, taking their catch direct to their home markets. The catch amounted to 7,708,000 pounds, valued at $231,240. The shore stations employed 284 persons and the catch was 3,597,288 pounds of prepared products, valued at $108,790, making a total of $340,030; an increase of fifty per cent over the previous year.

"Herring abound in numbers beyond conception in the waters of the Southeastern Archipelago, those in the northern waters equaling in size and flavor the far-famed Yarmouth bloaters of England. They are prepared for the market both as food, oil and fertilizer, and are the chief bait used in the cod and halibut fisheries. The number of fish in some of the "schools" is beyond computation. In many of the shallow bays hundreds of thousands are frequently left by the receding tides; the quantity being so great in a recent case, where the fish were caught in a sudden freeze and washed ashore in a solid mass, as to be a menace to health. Four factories for commercial products are located at Killisnoo and other points west and south of Juneau.

"While the above forms of fish life furnish the bulk of commercial products, reliable authorities state that no

less than 250 kinds of edible fish are found in Alaskan waters. Trout and grayling abound in all the lakes and streams and make the territory an angler's paradise.

"Though whales are not strictly fish in a scientific sense, their mode of life and similarity of shape, as well as the apparatus required in their capture, bring them into the fish group commercially.

"The gradually diminishing number of the Arctic whales (producing whalebone) has radically changed modern methods. It is now customary to have a home shore station from which small powerful steamers cruise, killing the whale with explosive bombs, inflating them to prevent sinking, and towing them to the rendering works on shore. Three such stations were operated in 1912, of which two are located on Baronoff Island and another on Akutan Island, near Dutch Harbor, in the Aleutian Islands.

"The total weight of food fishes taken during the season in 1911 was 256,154,109 pounds, or more than 128,000 tons. The total weight of the prepared product was 177,572,873 pounds, or 88,786 tons, valued at $16,391,139 for the fish and whaling industries, and $9,943 for other sea products, such as crabs, clams and seaweeds, making a grand total of $16,401,802. (Report of governor in 1911.) Seventeen thousand nine hundred and thirty-two persons were employed in the fishing industries and the capital invested was:

In vessels of all kinds	$ 5,559,534
Sea fishing apparatus	27,782
Shore fishing apparatus	724,383
Shore property	7,564,023
Cash capital	8,795,665
	$22,671,387

"Of this sum $19,931,215 was invested in the salmon cannery industry, producing 2,823,817 cases of salmon, valued at $14,593,237. In 1912 the product was 4,060,189 cases, valued at $15,551,794.

The value of mild cured salmon was.....$419,138
The value of pickled salmon was..... 203,988
The value of fresh salmon was..... 108,922
The value of frozen salmon was..... 18,024
The value of codfish was..... 240,030
The value of halibut was 822,370
The value of herring was 201,909
The value of whales was 104,084

"Several minor streams on the islands and mainland south of Juneau, as well as all of Afognak Island, south of Cook Inlet, are set aside as reserves for "hatcheries" and a recent order extends this restriction to all streams entering Cook Inlet itself, thus covering all of the extensive watershed of the Susitna River."

CHAPTER VIII.

VALUE OF ALASKA—SEALS AND FURS.

THE SEAL HERDS—LEASING SYSTEM ABOLISHED—STATISTICS OF OUTPUT—FURS—A DECLINING INDUSTRY—VALUE OF PRODUCT.

THE value of the seal product of 1911 was $416,992; the total value up to and including that year was $52,252,135. The vast herds of seals which annually resort to the Pribilof and St. George Islands in Bering Sea for breeding purposes is estimated at 123,000. This is a slight increase over the last previous count. The former leasing system has been abandoned, the islands now being under the direct management of the United States Government. The following statistics are taken from the annual report of the Department of Commerce and Labor:

	1910.	1911.
Number of seal skins taken	12,920	12,002
Gross receipts for same	$435,083.90	$415,992.40
Average per skin	33.68	34.74
Net receipts for same*	403,946.94	385,862.28
Estimated receipts to United States under old lease system	131,007.00	122,720.45

"These herds, numbering 123,600, are all that are left of the 4,000,000 to 5,000,000 which formerly made these islands in Bering Sea their summer rendezvous, overkilling, raids by poachers of various nationalities, and pelagic, or open sea killing, having wrought the destruction. Under

*From which must be deducted the costs of management.

present conditions and the stoppage of pelagic sealing, the herds seem to be increasing in number."

Furs.—The value of the fur catch of Alaska in 1912 was $370,510, and the total value up to and including that year was $22,216,872. As is well known, the number of fur-bearing animals in Alaska is now much less than in the period of Russian occupation. Nevertheless, the yearly output of valuable skins constitutes an important industry.

Regulations for the protection of fur-bearing animals in Alaska were promulgated on June 4, 1914, by Secretary Redfield, of the Department of Commerce. They were issued in accordance with the Act of Congress which gave the secretary authority to protect the seal fisheries of Alaska, and become effective at once. Under the new regulations the hunting or killing of seal otter is prohibited until November 1, 1920; and beaver until November 1, 1918. Closed seasons are also prescribed as follows:

On land otter and mink from April 1 to November 15, of each year; on marten (American Sable) from March 15 to November 15; on weasel (ermine) from March 15 to November 15; on musk rat from June 1 to November 30; on lynx (wildcat) from March 1 to November 15; and on fox from March 15 to November 15.

The killing of black bear, wolf, wolverine, squirrel and hare (rabbit) is permitted at all times and land otter and mink may be taken alive for breeding purposes at any time except from April 1 to June 30 of each year. Marten can also be taken alive for breeding purposes except from March 15 to June 30 each year, and foxes except from March 15 to June 30.

The use of poison in the killing of fur-bearing animals is prohibited at all times, as also is the killing of any animal whose skin or pelt is not prime. Heavy penalties are provided for violation of the regulations.

CHAPTER IX.

VALUE OF ALASKA—AGRICULTURE.

THE FUTURE GREAT PRODUCTIVE INDUSTRY—SOURCES OF INFORMATION—PROGRESS OF LAND SURVEYS—PROVISIONS OF THE HOMESTEAD LAW — FARMING CONDITIONS — CATTLE, SHEEP AND HORSES—WORK OF THE EXPERIMENTAL STATIONS—REINDEER INDUSTRY.

THIS brief compilation of the agricultural capabilities of Alaska, under the several heads indicated, is taken from the agricultural reports of the United States Government, and from those of Prof. C. C. Georgeson, special agent in charge of Alaskan Experimental Stations.

It is estimated that approximately 100,000 square miles of valley lands, with their adjacent low foothills, are available as arable and grazing land, comprising the valleys of the Yukon, Tanana, Susitna, Copper River, and portions of the Kuskokwim, with lesser areas on the minor streams, as well as a considerable portion of the Kenai Peninsula, and the Alaska Peninsula, including its adjacent islands.

During the last two years the Government has surveyed and sectionized some 200,000 acres in the Susitna, Tanana and Copper River Valleys, all this area being open to homestead settlement in tracts of 320 acres, with a three years' residence, the time to run not from the time of location, but from the date of actual occupation by residence. The provisions of this law are as follows:

"When proving up it must be shown:

"That at least one-eighth of the area embraced in the entry was continuously cultivated to agricultural crops, other than native grasses, beginning with the second year of the entry; and that at least one-fourth of the area embraced in the entry was so continuously cultivated with the third year of the entry."

From the same source of information, Captain Stretch has made the following valuable condensation:

"Agriculture in Alaska at its best should follow as an adjunct to other occupations, to the workers in which, products of the farm may be sold without undue tax on the same for transportation; and wherever practiced, in Alaska as elsewhere, calls for a study of the soil and crops suitable to its differing composition and aspect. Methods suitable in one part of the country may be unsuitable for others. Bottom lands producing a rank growth of grass may be too cold and sour for root crops, until thoroughly broken up and cultivated so as to let in the air and assist decomposition of the dead vegetation which takes place but slowly in ground saturated with water. Where drainage is absent or very imperfect the result is swampy ground, known in the North as "tundra" or "muskeg," in which the dead vegetation, instead of being transformed into soil through the processes of decay, is slowly converted into peat, or turf, as it is called in Ireland, to become in time an imperfect coal.

"In some sections the soil is covered with a thick layer of moss, which is almost impenetrable to the warmth of the sun, but when this is removed, the ground quickly thaws out on advent of summer, for the seasons change so rapidly in the North that what is called Spring elsewhere is almost an unknown thing in interior Alaska. As if aware of the necessity of being wide-awake, nature wastes no time in preliminary skirmishes. The best lands are the gently sloping hills composed of silt and fine gravel, which are also those on which the birch makes its best growth, these lands having been enriched by the leaves of the deciduous

trees and drained of standing water. Good judgment, otherwise called common sense, and the habit of observation are as essential in farming as in any other business.

"The prospective farmer must not picture miles of waving grain fields as in California or Washington, or the Middle West. For his profits he must look to a diversified product, which shall furnish his table with the necessary things of life, leaving him more than one article with which to satisfy the appetites of the consumers to whom he may sell the balance.

"Lastly it should be clearly understood that for the present, at least, farming must partake more or less of the character of market gardening around the mining centers, gradually expanding as these industries also grow; remembering also that on those things which can be grown in Alaska, but if not grown in Alaska must be imported from the outside, the cost of ocean transportation will also be in favor of the farmer. The consensus of opinion by those who have made a special study of the subject in all its aspects, not only in theory, but by actual experience on the ground, is that many thousands of Europe's population would gain by change of residence, especially those who have been living in similar latitudes under similar conditions; and did our ideas of government permit we might well extend to the settlers at least some of the favors, by means of which Russia is peopling the wild regions of Siberia, at the rate of millions annually, a land, too, which for more than two centuries has owned a reputation as bad as that of Alaska in the Eastern states.

"A similar policy is peopling the western countries of Canada, viz.: free land, free seeds and financial assistance during the first year, where such aid is wanted. In contrast with these inducements, it seems to be our policy to burden the settlers with conditions almost prohibitive in some respects, shutting out many who might otherwise become good and valuable citizens. Certainly our policy has sent many hundreds to countries with more liberal

ideas and a better understanding of the early years of pioneer life. There is room enough and to spare for thousands of settlers who are not of the class who desire to farm thousands of acres to one crop with machinery both mechanical and human."

Cattle, Sheep and Horses.—The government experimental stations at Sitka, Kenai, Copper Center, Rampart, Tanana and Fairbanks have so far been devoted to experimental vegetable developments, while that on Kodiak Island has paid attention to the cultivation of farming stock, more particularly cattle and sheep, as a source of beef and dairy supply. All the people of Alaska are aware that cattle thrive during the summer from the Yukon Valley southward, as large herds have been taken in over the trails, living en route on the native grasses and reaching their destination in good condition. Cows for milk and butter purposes are kept near all the principal towns, and at many of the stopping places on the roads and trails.

The work of the experimental stations is not for the purpose of establishing these facts which are well known, but with a view to selecting the kind of stock best suited to the country,—stock that will require the least winter feeding. In this the stations are succeeding, so that, within a reasonable period we may expect to see vast herds roaming over the Alaska country just as we now do over the plains of Montana.

The winter temperatures are much less severe than on the high cattle ranges of the Middle West. Native grasses are abundant and nutritious. In view of these facts we can see that Alaska, in a few years will not only supply meat to its own population, but will have a great surplus for export.

The whole region lies south of the southern extreme of Norway. It is well known that dairying is one of the

principal industries of that country. The cattle in Norway, however, are said to be of an inferior type; hence, the object of the Alaska experimental stations is to find breeds best adapted to the country. The latter is an important consideration where hay making may be interfered with by rain.

It is properly observed that as Alaska grows, more and more cattle will be kept in the vicinity of the towns, where barley, oats and timothy will be grown for hay and ensilage, supplemented by root crops, as in other countries, and a large part of the added cost of keep will be returned in the value of the manure and the maintenance of the fertility of the soil. Unquestionably the silo will be an essential feature in the equipment of every farmer in Alaska.

"For range and general purposes the Galloway breed, from the northern parts of the British Isles, has proved a good type, being hardy, gentle and of fair size. The tourist may find small numbers of Jerseys and Herefords on his travels, but he will always look in vain for the long-horned steers of Texas, or the semi-wild herds of Wyoming. Success will be attained chiefly, as in the older countries of Europe, through many individuals each keeping a comparatively small number, the total making a large aggregate."

It should be stated that the sheep on Kodiak and Raspberry islands have done well, experience showing that the long-haired breeds are best adapted to the moist coast climates, as the fleece sheds the rain more rapidly than the thick, short wool of the others. On Raspberry Island near Kodiak there is a band of five hundred or upwards doing well.

As is well known, horses are in general use in nearly all parts of the Territory, both as draft and pack animals, their more extensive use being limited chiefly by the absence of good roads. Where such exist they are used on

HAYFIELD NEAR FAIRBANKS, ALASKA

CABBAGE PATCH, TANANA VALLEY, ALASKA

the winter stage lines and may be utilized in summer by the farmer when these routes are closed. Abundance of hay and grain may be raised in the interior for winter use.

"One hundred and seventy-five horses form the equipment of the Fairbanks-Chitina-Valdez stage line, and an equal number are used on the White Pass Route from Dawson to Whitehorse, and so far as their ability to stand the climate is concerned, the only difference lies in the greater length of the winter months in the North, involving more winter feeding; this again being offset by the higher prices obtained for their labor. The small, tough ponies so common in Norway have not yet been introduced, although they fill such a useful place in that country and ought to be easily acclimated."

Reindeer.—As elsewhere stated the reindeer industry is becoming an important one in Alaska. Official reports say that the enormous destruction of game, seals and walrus having reduced many of the natives to the verge of starvation, the United States government imported from Siberia, in the years 1891 and 1902, twelve hundred and eighty head of reindeer, the descendants of which now number approximately thirty-eight thousands, with an annual increase of about 30 per cent. At the close of 1913 there were over sixty-two herds and 46,000 animals.

CHAPTER X.

GRAINS, GRASSES, VEGETABLES, FRUITS.

Good Success with Oats, Barley and Rye — Favorable Indications of Experiments with Wheat — Rapid Growth and Abundance of Grasses — Abundant Growth of Timothy — Vegetables a Splendid Crop in Nearly all Sections — Extensive Varieties of Potatoes — Wild and Cultivated Fruits Abundant.

IT has been fully demonstrated that oats, barley and rye can be grown successfully in Alaska. This is in evidence at the experimental stations in the Yukon-Tanana valleys, as well as that of the Copper River, and at the farms round Fairbanks and in the Susitna Valley. In some of these sections barley has been raised for hay at the rate of three tons to the acre. Much time and some expense have been devoted to the growth of all kinds of grain from northern countries, with strong indications of success. Handsome samples of wheat have been grown, but this is a more tender grain, and while a large measure of success has attended the trials at the experimental stations it has not yet been cultivated on a large scale like the others. The winter sown grain does well if covered by snow, but it is liable to be frost killed on ground swept bare by the wind.

"It is no new thing to grow these cereals in northern countries as they mature rapidly. At Uleaborg, Finland, in the same latitude as Fairbanks, oats, barley and rye are staple crops and are also largely grown in Northern Russia, requiring only from seventy to eighty days from

seed to maturity. It is not the intensity of the winter cold which governs their successful growth; the great point is the date at which the ground attains a sufficient warmth to cause the seed to germinate (42 degrees for wheat) and a sufficient time thereafter to mature it. Persons are apt to forget that long winter hours involve long hours of daylight in summer, for all parts of the world receive the same number of hours of daylight though differently distributed in the course of the year. The conditions and results in the Tanana Valley have been chiefly dealt with on account of its high latitude, for what can be done there can be done in the more southerly localities."

Grasses grow rapidly and abundantly. Timothy springs up wherever imported hay has been fed to stock and is rapidly becoming acclimated. Among the forty native grasses red top attains a growth breast high in thirty to forty days and also seems to be the richest in nitrogen among its congeners. It grows everywhere, but is said to rebel against annual cutting, so that cropping every other year is recommended.

Several kinds of vetches and peas make excellent wild fodder, but do not take kindly to cultivation, so that experiments are being made with varieties of alfalfa from Siberia, living under conditions similar to those in Alaska, the same being the case with Siberian wheat.

"The results hitherto attained by the unobtrusive work of the laborers in the experimental stations is worthy of all praise not only for those already obtained, but for those to come and measurably in sight."

Vegetables.—Magnificent vegetables are, or may be raised in all parts of Alaska, except on the tundras and mountains. Strangers visiting the country generally are surprised at the splendid vegetables exhibited, native to the country, wherever they go. These include all the products of the temperate zone in America, and the Seattle-

Alaska bureau has in its exhibit potatoes, turnips, beets, rutabagas, sugar beets, carrots, parsnips, kohlrabi, celery, rhubarb, radishes, onions, cabbage, cucumbers, peas and even tomatoes, and in one or two very favored spots even melons have ripened. The samples both for size and quality will compare with the markets of New York, although grown more than 1,500 miles north of that city. Every family can have its garden, which will not only furnish the necessities of life but will beautify the home with a wealth of flowers. These facts have become so well known that notice of them has practically disappeared from the reports of the agricultural stations, but as the potato is so important an item in the daily menu, every effort is being put forth to secure those varieties best adapted to the climatic conditions of rainfall and sunshine. The following facts are from the latest reports of the station located at Fairbanks in the Tanana Valley, only about a hundred miles south of the Arctic circle:

Twenty-seven varieties of potatoes were cultivated during the season of 1911, of which three were planted on June 1, nine on June 9 and the remainder on June 10. They matured between September 11 and 22, with a yield at a rate varying from 7,260 to 18,876 pounds per acre on the experimental plats. In the open field three varieties produced five tons per acre after sorting and grading on second year unfertilized ground. The character of the potato depends much on the kind of soil and method of cultivation. The best results are said to be secured by allowing the potato to sprout and setting them out on the surface of the ground with plenty of room between the rows; then covering with about an inch of dirt, to be subsequently well ridged up. On a gentle southern exposure of silty soil, such as is favored by the birch, potatoes grow to a large size and possess a fine, mealy texture.

Cabbages from department seed made heads weighing from eight to twelve pounds. Cauliflower was as fine as

grown in any country. One gardener claims to have sold sixteen tons of cabbage from half an acre in 1910.

There are several notices of the growth of sugar beets (but no information as to their sugar contents) and these with other root crops, such as rutabagas and carrots, can be grown in quantity for winter feed to stock.

As stated, the foregoing information is compiled from United States Agricultural reports, and from those of Prof. C. C. Georgeson, in charge of the Experimental Stations. Summing up the situation, the latter says: "All these vegetables can be grown and are grown as far up as the Arctic Circle and beyond. This is not saying that they can be grown with equal success in all places and in all conditions, for on this point the elevation, rainfall, soil and local conditions as to climate are important factors. Nor do I say that there is not now and then a cold summer, in which only the hardiest of these things make satisfactory growth. But under normal conditions and with good culture all of these vegetables are grown successfully even beyond the Arctic Circle."

Wild Fruits abound in Alaska. Indeed the Territory is a land of berries, not only in quantity but variety, including currants, strawberries, raspberries, blueberries, huckleberries, cranberries and salmon berries.

The immense profusion of some of these berries in some localities suggests an opening for their use commercially, as canned products and preserves, especially in the case of the blueberries, huckleberries and currants, which for size and flavor are unsurpassed anywhere. In Southeastern Alaska, especially in the vicinity of canneries where steam could be obtained cheaply, their profusion will relieve the small settlers of the necessity of their cultivation.

Cultivated Fruits.—Capt. Stretch in his able compilation writes:

"Nearly all the hardy fruit bushes do remarkably well in Southeastern Alaska, and the currant and raspberry

also do well all over the interior. The same may be said of the strawberry in a more limited degree as to localities.

"Gooseberries do well in the Pacific Coast belt, but it seems probable that blackberries, dewberries, loganberries and grapes will not thrive in Alaska, for while experimental plants have lived for several years, they never fruited.

"Experiments with apples, plums and cherries have not been eminently successful up to this time, although there is a native crabapple growing extensively in some sections, especially the Susitna Valley. The Sitka experimental station reports a small degree of success with apples and cherries, but none with plums."

CHAPTER XI.

FORESTS OF ALASKA.

SOURCES OF INFORMATION—THE GREAT FOREST RESERVES—THE PRESENT LUMBER PRODUCT — AN IMPORTANT WEALTH-PRODUCING INDUSTRY.

THE timber of Alaska properly is registered among the most valuable assets of the country. The following summary of the forests of Alaska is made up from the official report of R. S. Kellogg, assistant forester in 1910, and the report of the Governor of Alaska for the fiscal year ending June 31, 1912.

The total area of the forests and woodlands in the Territory is estimated at about 100,000,000 acres, or 156,250 square miles, or 27 per cent of the total area. Of this about 20,000,000 acres, or 31,250 square miles, are estimated as containing timber suitable for manufacturing purposes, which is more than the area of South Carolina and nearly that of Maine or Indiana. Of the remaining 80 per cent, or 125,000 square miles, one-half is classed as woodland, carrying some saw timber, but on which the forest trees are of a small size, more scattered and valuable chiefly for fuel; the tree growth on the remainder being stunted, scrubby and valueless for any purpose except the camp fires of the prospector. The region north of the Endicott Mountains, all of the shores of Bering Sea, and the Alaska Peninsula, south of Illiamna Lake, are practically destitute of timber, producing nothing larger than willows of very small growth, and those only in a few localities.

The forest reserves are the Tongass National Forest, covering the entire Southeastern Archipelago, and the Chugach Reserve with a width of about 100 miles extends along the shores of the Pacific from the Malaspina Glacier to the Kenai Peninsula. These two reserves contain 26,761,626 acres, or 41,815 square miles, and include the great bulk of the merchantable lumber trees. The trees suitable for lumber on the coast region are in point of numbers and value, the western hemlock, the Sitka spruce, western red cedar and yellow or Alaska cedar. The forests are dense and as much as 25,000 feet per acre have been estimated for considerable tracts, of which 20 per cent is spruce, 75 per cent hemlock, and the remainder cedar and other timber trees. The spruce reaches a large size, up to six feet in diameter and a height of one hundred and fifty. Diameters of three or four feet are attained by the cedars. The growth is fairly rapid, spruce logs averaging 32 inches in diameter averaged 262 annual rings; two others 54 inches in diameter showed 525 and 600 rings.

The forests of the interior are practically all included in the drainage basins of the Yukon and Kuskokwim Rivers, and are of a more deciduous type, saw timber being secured from the white spruce and cordwood from the white birch, poplar, balsam poplar, black cottonwood and aspen. The timber is small; white spruce and balsam poplar sometimes attain a diameter of 18 to 24 inches, while birch and aspen average about eight inches, running up to 18 in favorable localities. Other trees are smaller. The white spruce and balsam poplar grow to 75 feet; birch, aspen and poplar to 50; black spruce from 20 to 40, and tamarack seldom over 30. Twenty-five spruce logs 32 feet long and slightly over eleven inches in diameter showed an average of 104 annual rings, indicating a growth of one inch in nearly nine years, thus comparing favorably with the growth of red spruce in New York and New England.

Speaking of the utilization of the forests of Alaska, Capt. Stretch says: "The amount of lumber at present used

annually in the Fairbanks region by the quartz mines is small, a recent estimate, covering the years 1909, 1910, 1911, 1912, placing it at 900,000 feet, and the annual cut for all purposes is estimated at about 4,000,000.

"The cut for fuel is placed at 60,000 cords, of which Fairbanks is said to consume about 15,000 to 20,000 cords. The present price of rough native lumber at Fairbanks is stated to be $40 per thousand and cord wood brings from $5 to $16 a cord, varying with the place of delivery, being a reminder of the days on the old Comstock Lode in Nevada when $14 to $16 was the ruling price, according to quality.

"For the fiscal year ending June 31, 1912, 44,647,410 feet, board measure, were cut in the two national forests. At least 90 per cent of the total revenues of the reserves comes directly or indirectly from the fisheries. At least 80 per cent of the lumber sawed at the various mills was used by the fishing industries. The sum of $914.50, or 1.7 per cent of the total receipts of the national forests in Alaska, came from the mining industries, and four of the largest producing companies on the Tongass, and one on the Chugach Reservation purchased timber of a stumpage value of only $893.40. (All other timber and lumber was imported.) The expenses for the fiscal year were $35,602.92, and the receipts $46,949.26.

"The lumber industry is evidently capable of enormous expansion and an untold wealth of wood pulp for paper is locked up in these now silent forests. Recently the government has advertised 300,000,000 feet of lumber for sale, and two large pulp mills are said to be contemplated in the immediate future, for the southeastern forests."

CHAPTER XII.

WILD GAME ANIMALS.

SOURCE OF INFORMATION—MOOSE OF ALASKA—THE CARIBOU—MOUNTAIN SHEEP AND GOAT—VARIETY OF BEARS—THE WALRUS—WILD GAME BIRDS.

THE following important observations on the Alaska moose, mountain sheep, mountain goat, deer and caribou are condensed from the reports of W. H. Osgood, assistant biologist, Department of Agriculture:

The moose is the largest member of the deer family in the world, exceeding in size the moose of eastern North America and the elk of the old world. They are generally distributed throughout the timbered portion, except in the southeastern coast region, where they are absent. On the Alaska Peninsula they range to the limit of timber and in the north and west likewise reach the edge of the tundra. They range above timber line, but most of their time is spent in the woods at moderate elevations, or in river bottoms with ponds and dense growths of willow and alder. The calves are born during May and June and follow the cows until next spring or later. Beyond doubt they are most abundant on the Kenai Peninsula and attain a larger size, but they are also fairly common near Circle City and many less known localities.

The Caribou inhabits the treeless and semi-treeless parts of Alaska, including the bare mountain ridges of the interior, and the open rolling tundras of the coast from the Arctic to the Pacific side of the Alaska Peninsula,

where the so-called reindeer moss on which they largely feed is most abundant.

They scatter widely in summer and in the fall collect in large herds, but at all times they roam widely. The great herds in the fall of the year perform a more or less regular movement in the nature of a migration, and within certain limits their course of travel and times of arrival at given points are well known. Except on the Alaska Peninsula caribou are very scarce on the shores of Bering Sea, where formerly abundant, having been driven out or extirpated. Their place is being taken by the reindeer, which is practically a domesticated caribou.

The Mountain Sheep of Alaska is practically pure white, somewhat smaller and with more slender horns than the big-horn or Rocky Mountain sheep. It prefers the higher altitudes and is usually most abundant about the main divides and the higher or more central peaks. It is not found in the Alaska Peninsula or the coastal slopes of the mountains of Southeastern Alaska, but large numbers live on the Kenai Peninsula, the Endicott Mountains, where they range nearly to the coast, on Mt. McKinley and its adjacent summits.

The Mountain Goat is confined in its range to the mountains of the Southeast Archipelago and the adjacent mainland, and the high coastal peaks as far west as the western shores of Prince William Sound; or roughly speaking, those regions from which the mountain sheep is absent. It is a bolder climber than even the mountain sheep and may be found in more inaccessible places, and from such reasons its habits are less perfectly known. Strictly speaking it is not a goat at all, having many peculiarities common to antelopes, and finds its nearest relation among the chamois of Europe and some little known Asiatic forms.

Only in the southeastern coast region are deer abundant and in that district only one species is found, a small variety of the blacktail, averaging not more than 100

pounds in weight. It ranges farther north than any other American deer and was formerly so abundant that during one season 2,000 carcasses were shipped from Wrangel alone. It ranges from sea level to timber line, is a shy animal, and might be rarely seen except for its numbers. As trophies the horns are of only secondary value.

Alaska is without rival in respect to number and variety of bear. No fewer than thirteen varieties are recognized by scientists, but they belong to only four general types —the brown, the grizzlies, the black and polar bears. The brown bears are the most numerous and are more nearly related to the brown bear of the old world than to the other American species. They are of huge size and larger than any others except the polar bears and their relatives of Kamchatka, and enjoy a reputation for ferocity equal to that of the grizzlies. They are found on Kodiak Island, the Alaska Peninsula, in the Yakutat region and on Baronoff and Admiralty islands—those on these last islands being smaller varieties than those of the mainland and Kodiak Island, on which they appear to attain their maximum size, and have therefore become known as the Kodiak bear.

The grizzly bears are generally distributed through the Kenai Peninsula and adjacent regions, but are probably most abundant in the Endicott Range in the north, and the Nusotin and Mount McKinley ranges in Central Alaska. They spend the summers chiefly above and near timber line and roam largely.

Black bears are fairly common all through Alaska, the cinnamon variety, however, being almost unknown near the coast. They are shy animals and their presence may often be overlooked. A peculiar and rare variety, known as the blue or glacier bear, is found on the southern slopes of the St. Elias Range, but its habits are practically unknown, few if any perfect specimens being in existence in museums. In color it is silvery grey, sometimes with a blueish tinge, the nose black and the feet brown.

The polar bear is known to everybody, from pictures at least. They are the largest of bears and not found south of the Arctic Ocean. Bears are omniverous feeders. In berry time they largely subsist on these fruits, but according to the season of the year, or locality, they eat salmon, shellfish, kelp and seaweed, squirrel, mice, roots and undoubtedly at times such large game as they may catch unawares.

The walrus is now found only occasionally south of the Arctic Circle, those which formerly herded on Bristol Bay and other localities having been practically exterminated.

Wild Game Birds.—Alaska is the great breeding ground of the water birds which annually migrate southerly in the winter. These include ducks, geese, swans and a host of other shore birds, such as snipe, curlews and sand-pipers, which all resort in thousands to the open tundras and valleys of the far North during the breeding season; but the number seems to be decreasing, owing to the annual winter slaughter in their southern haunts.

Three varieties of ptarmigan inhabit all the higher mountain tops of the coast and interior, and the tundras of Bering Sea and Arctic Coast, including all the Aleutian Islands. They gather in immense flocks in the fall, at which time they lose their brown coloring and assume a protective white, as do the hares and ermines.

Five species of grouse, known as the Alaska spruce grouse, the gray ruffed grouse, the Sooty grouse, the sharp-tailed and the Franklin grouse, are timber birds—and one or more of these varieties is found generally over the territory in such localities.

CHAPTER XIII.

FLOWERS, BIRDS AND INSECTS.

LAND OF FLOWERS, FERNS AND MOSSES—GREAT VARIETY OF BEAUTIFUL FLOWERS—MULTITUDES OF BIRDS ENLIVEN FOREST AND PLAIN—INSECTS.

CONTINUING to present information gathered from the source of the last chapter, the following condensation of the flowers, birds and insects of Alaska is here presented. "Alaska is a land of flowers and ferns and mosses, to say nothing of its lichens and mushrooms. They spring up everywhere as soon as the snow disappears, and it is probable that more than 2,000 species of flowering plants and shrubs find a home within it borders, to say nothing of the hundreds of less conspicuous forms and grasses, of which latter there are said to be more than forty varieties. Many of these are species common to circumpolar regions, and some of them were distributed by the Russian botanists a hundred years ago, so that not a few are the common garden flowers of the States. Red and yellow columbines, blue lupins, aconite or monkshood and larkspur give color to the forest borders; yellow and white water lilies keep company with purple flags in the marshy grounds; the tundras are gay with dandelions, buttercups and daisies, and the hillsides are covered with acres of blue forget-me-nots, white heather and pink roses, by the hundreds of thousands. The fireweed flaunts its magenta blossoms everywhere, while the huge leaves of the skunk cabbage and devils club guard the borders of every runlet in company with the riotous

salmon berries. These for the valleys. As you climb the mountains, gentians, saxifrage and lady slippers, cyclamens and asters, and hundreds of others in all colors and names known only to the botanists help to paint the picture. The white daisies of the Tanana rival the Shasta daisies of Burbank in size and purity of color; violets, both blue and yellow, are among the early blossoms, along with the anemones, and the little dwarf dogwood or bunch berry in company with the delicate wood fern carpets the open wood with vivid green and silver stars, as it does the forests of Washington. This is no land of perpetual ice and snow. Glaciers there are, as in Switzerland, but the flowers blossom at their very feet, and it is an easy matter to gather a hundred varieties of flowers without walking more than a mile from home, unless it be in the farthest north, and even there Flora's footsteps have left some of her treasures, be they nothing more than the silken white seed pods of the rushes, flecking the tundra like snow drops.

"With such a variety and luxuriance of grass and flowers and ferns, it is no wonder that the settlers are able to boast of beautiful gardens round their homes. To the Eastern tourist, with his or her preconceived ideas, it is a constant source of surprise to see pansies, marigolds, poppies and nasturtiums flourishing on what was supposed to be a frozen wilderness, while the rapidity with which they grow and become acclimated is astonishing. The California poppy, with its blazing orange, native though it be of warmer climes, seeds itself as far north as Fairbanks and Dawson, and the weeds of the States have not been slow to follow its example, as witness the spread of the wild mustard, bindweed, dandelion, wild chamomile, chickweed and other pests."

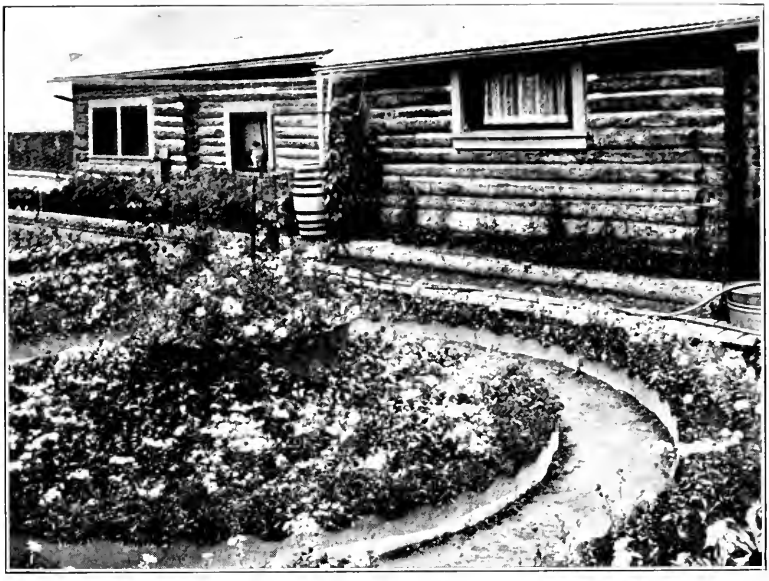
Birds.—Alaska is enlivened by an abundance of birds, as well as innumerable water fowl. Aside from the natives

such as the ravens, crows, hawks, owls, eagles, ptarmigan and grouse, the migratory birds arrive in thousands about the end of April or early in May. Comparatively few remain on the coast, the main army finding its way to the interior through the passes of the Yukon, Copper River and Susitna valleys, only to return in August and September on their southbound journey. Among these smaller birds are the well-known robin, with its variegated cousin; five kinds of swallows and martins, as many kinds of sparrows and tiny warblers, in their gay dress of green, yellow, black, brown and chestnut, red linnets, wagtails, larks, kingfishers, bluejays, Montana camp birds, woodpeckers, and last and least, tiny copper-hued humming birds, which range up to the Arctic Circle.

"The bird life probably numbers more than 200 species, while the variety and numbers of the insect-eating migratory forms is a certain index of the abundance of insect life."

Insects.—Besides the mosquitoes and black gnats, which undoubtedly supply the greater part of the food of the swallow, two-winged flies, ranging in size from bumble bees to midgets no bigger than an atom of dust, are abundant everywhere in infinite variety of forms, and unquestionably take the place of bees in fertilizing the flowers by carrying the pollen from blossom to blossom.

"Bumblebees in black and yellow liveries, sometimes trimmed with red, are on the wing with the opening of the earliest cranberry bells, even before the snow is all gone, but they cannot be said to be abundant, neither can the yellow jackets and hornets, though their nests may be found when least wanted. They are, however, expert executioners of flies and invariably decapitate them with one snip of the jaws before proceeding to dinner. They will clear a tent of flies as easily as a pinch of insect powder. Butterflies, white, blue, copper-colored and



FLOWER GARDEN AND CABIN, FAIRBANKS, ALASKA
Photo by Curtis & Miller. Courtesy W. P. & Y. R.

CHILDS GLACIER—ON THE COPPER RIVER ROUTE
Photo by Curtis & Miller.

yellow; the big black and yellow swallow-tail of California and the East, and several other forms common to the Western States have found a home here also, and appear to enjoy life; dragon flies follow the chase over the tundras, and whirligig beetles waltz over the ponds, and it is doubtless this fecund insect life which attracts so many of the smaller migratory birds."

Animal Life.—Here is an interesting bit of natural history: "The underworld of four-footed life is another mystery of the North to those who have not stopped to figure out the ways in which those we kill for their furs maintain an existence. With such a rank vegetable growth it is easy to understand that the muskrats and beavers have an easy time of it, but how about the minks and martens, weasels and foxes, which are flesh eaters and numerous enough to supply the market with thousands of skins annually, to say nothing of the owls which make their living when other birds are asleep. The secret lies in the variety and number of the rats, mice, moles and ground squirrels, shy little animals, seen only now and then accidentally in the day time, but which forage in the night time or in the deep shadows and shelter of the tangled undergrowth of the woodlands. We know their variety, but we can only guess at their numbers, yet they need to be a prolific race to make up for the annual slaughter by their enemies."

CHAPTER XIV.

THE ALASKA OF TODAY.

POPULATION—TRANSPORTATION—TERRITORIAL LEGISLATURE—THE FUTURE OF ALASKA—FARMING—LACK OF AVAILABLE MARKETS—AGRICULTURAL CAPABILITIES OF ALASKA—AIDS TO NAVIGATION—LABOR CONDITIONS—THE COAL LANDS—PUBLIC SCHOOLS—WATER POWERS—PUBLIC HEALTH—THE LEGISLATURE—COMMERCE—MAIL SERVICE.

IN the contents of the next preceding eleven short chapters, we have a first view of the value of Alaska as a wealth producing country. The two important subjects of the scenic wealth of the great territory and "Alaska as the Land of the Sportsmen" are left for later consideration. We will now give attention to a general review of the Alaska of today, which will lead us to even more thoroughly investigate the requirements of this Great Northland.

In pursuance of this plan I will introduce to the reader, His Excellency, the Governor of Alaska, the Hon. J. F. A. Strong, the right man in the right place, who seated in the executive mansion of the ambitious young Territory, at Juneau, the capital, will tell you a most interesting and instructive story of Alaska as it was at the close of 1913, according to the terms of his able and exhaustive report to President Woodrow Wilson:

A more hopeful feeling now is evident among the people of Alaska than for several preceding years. This is due to the belief that the Territory is about to enter

upon an era of unparalleled prosperity, industrially and commercially. While the rich placer gold fields of the interior of Alaska and Seward Peninsula no longer give employment to as great a number of men as in former years, the placer gold output still is large. The old methods of placer mining are being displaced, and in some districts the power dredge has revolutionized the methods of mining, and alluvial deposits carrying lesser values are worked at a profit. In the placer regions, too, attention now is being directed to prospecting for quartz, especially on Seward Peninsula and in the Fairbanks region of the Tanana Valley. In the latter section a number of quartz mines are being developed; the cost of development has been obtained from ore taken from the mine in the progress of development work. On the Seward Peninsula there also is considerable activity in quartz development, including gold and tin ledges.

Population.—The decline in placer mining by the old methods has resulted in a decrease of the population in the strictly gold placer regions, but on the other hand in other sections there has been an increase of population, especially in Southeastern Alaska, due to extensive quartz mining developments, the growth of the inshore and deep sea fisheries, and the consequent increase of commercial business. It is probable, therefore, that the population of the Territory as a whole has increased to some extent during the past year.

The census of 1910 was the fourth enumeration of the population of Alaska by the United States Government, the others having been taken in 1880, 1890, and 1900. In 1880 the population, partly estimated, was 33,426, 98 per cent being Indians; in 1890 the population was returned at 32,052, a decrease for the decennial period of 1,374. In the following decade the population nearly doubled, the great increase being due to the rush of gold

seekers in the three years prior to the census of 1900, the enumeration of that year having returned a population of 63,592, an increase of 98.4 per cent.

Many of those enumerated in the census of 1900 did not settle permanently in the country, and although the Indians and Chinese decreased in number by more than 6,000 there was nevertheless a slight increase in the population (764, or 1.2 per cent) during the decade 1900-1910.

Alaska, under the terms of the act of March 3, 1909, is divided into four judicial districts. The population in 1910 of these districts was as follows: First, 15,216; second, 12,351; third, 20,078; and fourth, 16,711.

The total area of the Territory is 590,884 square miles. The density of population per square mile in 1900 and 1910 was 0.1; that is, there was only about one inhabitant to ten square miles of area.

The white population at the present time is estimated at 36,000.

Alaska has therefore passed the low-water mark from the standpoint of population, and, although there has been no attempt at taking a census of the inhabitants (except in a few towns) since the last decennial census, it is believed that the population is now slowly but permanently increasing, and that the increase of native-born whites and white immigrants will steadily grow in the coming years. The number of white males of voting age in Alaska in 1910 was 28,030, or 76 per cent of all males of voting age; in 1900 the corresponding percentage was 68.4.

Various causes may be assigned for the slow increase in the population of Alaska. The decrease in alluvial or placer mining, as has been pointed out, is one of the prime causes; but a more important cause lies in the fact that the Government policies that have been pursued, instead of encouraging the development of the Territory's vast natural resources, have had the effect of discouraging the prospectors and miners who, in a country such as this,

are the advance agents of development and the couriers of civilization. Lack of transportation facilities has been, and is, another potent cause which has operated against the development of promising mining regions; and joined to all this is the additional embargo that has been placed upon the Territory by that Government policy which has resulted in locking up the coal areas of Alaska, thus preventing their development, the promotion of industrial and commercial activity, and the increase of population —a condition, if this policy were reversed, that would be created by the opportunities for labor and capital that would accrue from the establishment of new lines of human endeavor and activity.

Transportation.—A comprehensive system of railroads for Alaska is a thing indispensable for the development of the country, because its prosperity and further development depend upon the solution of the problem of transportation. This system should not only include one or more trunk lines, from some point or points on the coast, to the great interior country, but it should also embrace branch lines to the coal fields and other mining sections wherever practicable. This recommendation is in line with the report of the Alaska Railroad Commission, made in 1912, and the railroad bill since passed by the Congress.

Supplementary to railroads, and as producers of added tonnage for railroad transportation, there should be a largely increased appropriation by Congress for the construction and maintenance of new roads and trails. An appropriation by Congress of a million dollars a year for this purpose, for a period of ten years would add to the national wealth, in a decade and a half, $100,000,000, because since cheap transportation is the essential factor in the development of pioneer countries, the resultant effect would be a tremendous increase in the mineral output of the Territory, besides opening to agricultural pur-

suits vast areas of land now practically inaccessible, or which can only be reached at great cost.

Territorial Legislature.—Another factor that has given the people of Alaska renewed hope for the future is the creation of a local legislature, by which a fair measure of home rule has been given to the Territory. The first session of this body convened on March 3, 1912, and during the sixty days' session considerable progressive legislation was enacted that promises beneficial results for the people as a whole. The work of the legislature was such as to amply demonstrate that the people of Alaska are fully capable of governing themselves.

Future of Alaska.—The statement that Alaska is to be the future home of millions of Americans and that it will comprise several new states is not extravagant. The Territory is just beginning to be known in part and its potential possibilities appreciated in part. Given reasonable opportunities Alaska will be a "poor man's land,"—one where is not found the "millionaire's home on the hill and a thousand hovels in the valley"—one where the poor man is not a pauper or has the fear of pauperism in his heart. While there has been much buncombe, more or less pure, spoken and written about Alaska, there has also been much truth told and printed about it. The Territory is not a Utopia, though it has been so pictured. Neither is it an "ice box," fitted only as a habitat for polar bear, Eskimos, and fur seals which long was a popular delusion and which still is cherished even in many parts of the United States. It does not measure up to the Utopia ideal under existing conditions. It has, however, all the materials for the making of an ideal State or a number of States. It has in the raw all the resources, natural advantages, and opportunities that were offered to the pioneers in other Territories of this Republic,

and all that the pioneers of Alaska ask is to be permitted to make legitimate use of them. Alaska may be preserved and developed as the truly representative section of America. It must not be permitted to fall into despoiling hands, but this condition need not be seriously feared at this time. Alaska today stands as the land where hands and tools may come together if only thrift impel the hands; the land where individualism may grow from human roots; the land of equal opportunities.

Farming.—Agricultural development has reached a stage that insures it a permanent place in the industries of the Territory. This statement applies generally to the interior country and particularly to the Tanana and Yukon valleys. The work being done at the Government experimental stations at Sitka, Rampart, and Fairbanks, all of which were inspected the past summer, is of surpassing interest and is such as to demonstrate thoroughly the wisdom of establishing these stations. Much work has been done in reclaiming and cultivating the lands, and farm development has been greatly aided and stimulated through the agency of these experimental stations; notwithstanding this there apparently has been but a small increase in the number of farmers in Alaska during the past year. This is due to economic conditions, which are such that there is no inducement to practical farmers in the States and elsewhere to settle in Alaska. The country cannot be developed agriculturally until railroads are built and the costs of transportation very materially reduced. It will cost a farmer, from almost any part of the United States, as much to transport his family and his live stock, his equipments and implements, etc., to Alaska as it would to buy a small farm in the less thickly settled regions of the Northern and Northwestern States. Add to this the cost of the survey of his homestead, if located outside the few districts where Government surveys have been made, the expense of erecting the neces-

sary buildings and of clearing the land, gauged by the prevailing wages for day labor in Alaska, and it becomes a venture which no poor man can undertake.

Lack of Available Markets.—And if he should meet all these adverse conditions successfully, he still finds that when his crops are ready to market lack of transportation facilities makes it impossible to sell them, except when he is fortunate enough to have a local and near-by market, as is the case at Fairbanks. These are conditions which prevent the agricultural development of Alaska, and which will continue to prevent it until railroads are built and freight and passenger rates are so reduced as to be somewhat near to those prevailing in the States. The Government, it is submitted, alone can remedy these conditions. In the meantime, American farmers continue to flock to Canada, where the handicaps existing in Alaska either do not exist at all or are greatly minimized.

It is again emphasized here that Alaska has great agricultural possibilities, but railroads, highroads and other means of improved transportation must be had before these possibilities can be developed, and then it will be desirable to encourage settlement of the country by people from Northern Europe and the Northwestern States, who are accustomed to a cold climate and familiar with the methods of agriculture which must be followed in high latitudes.

In this connection it is suggested that it might be well to modify the immigration laws, as far as Alaska is concerned, so that it will be possible for colonies of Scandinavians to settle in Alaska as agriculturists without great expense to themselves. If established precedents of our Government could be overcome to the extent of paying the transportation of desirable immigrants, who should be selected by Government agents, from their homes to Alaska

and by helping them along by small loans until they became established, Alaska would be speedily settled with a people who would clear the wilderness and turn it into productive farms. It may also be pointed out here that the Canadian Government has for years been offering special inducements to farmers in the United States and Northern Europe to move to Canada and settle the agricultural land of the Dominion, agents of that Government having been paid bonuses for every person they induced to settle in that country. The result of this policy has been that hundreds of thousands of good American farmers have moved to Canada and taken with them millions of capital, and whatever Canada has gained has been America's loss, and therefore it is suggested that our laws and precedents should not be so inflexible that they cannot be made to yield to the evident interests of this great country.

In this place we turn aside to include the following important statement of the agricultural capabilities of Alaska made by Prof. C. C. Georgeson, special agent in charge of Alaska Experimental Stations, of the Department of Agriculture. We do this at the risk of some very slight repetitions of what already has been said on this subject:

"Alaska has two climatic belts known, respectively, as the coast region and the interior. The coast region is rainy, has mild winters and cool summers. The interior region is for the most part dry, has very severe winters and short but warm summers. These distinctions should be borne in mind because they have an important bearing on the success of the farmer.

"Considering first the coast region, Southeastern Alaska is for the most part covered with timber. The country is rugged; there are but few valleys suited to agriculture. The spruce timber in most cases reaches clear to the edge of the sea. It is ordinarily too expensive

to clear this land for farming purposes. In the Prince William Sound region and westward to Bering Sea, the forest gradually disappears until west of Kodiak Island there is practically no forest at all. This region is covered with grass and low bushes and is suited for grazing purposes. Cattle and sheep can, if they are hardy, live out the entire year, and cattle can obtain food as long as the ground is not covered with snow. Vegetables of hardy kinds can be grown successfully in the coast region. Cabbage, cauliflower, lettuce, radishes, turnips, etc., are no better, sweeter, or crisper anywhere than those grown in this region. On the other hand, grain growing can not be said to be a success. Barley and oats can be matured, but usually the fall rains are so heavy and so continuous that it is difficult to save the grain after it has ripened. Southeastern Alaska is practically only adapted to gardening, and Southwestern Alaska is preeminently adapted to stock raising and gardening.

"The interior region differs totally from the coast belt not only in climate but in products and agricultural capacity. While the summers are short, about ninety to one hundred days free from killing frost, the weather is warm enough to mature all the hardy grains. The Government has maintained an experiment station at Rampart, Alaska, in latitude 65 degrees 30 minutes, since 1900, and in that period the experimenters have never failed to mature all early varieties of barley and oats. Spring wheat and spring rye, on the other hand, mature but seldom; they require a rather longer season than barley and oats. Winter rye and winter wheat can be matured successfully, not only at this station but throughout the interior, whenever the snowfall is three feet deep, so that the crop is protected during the coldest portion of the weather. Winter grains should be sowed about the first of August, and they will be ready to harvest about the middle of August of the following year. Hardy vegetables of all kinds can be grown in the interior with equal or

possibly even greater success than in the coast region. This is proven by the many successful market gardeners scattered throughout the country wherever the mining camps afford a market.

"The mainland, including the region of the Kuskokwim and Nushagak rivers, is intermediate between the coast region and the interior, as here noted. The summers are cool like the coast belt and the winters not so severe as in the interior. Oats and barley can be matured in the Kuskokwim and Nushagak river valleys, but conditions are not quite as favorable as, for instance, in the Tanana Valley, and the feeding season is longer than in the coast region.

"Going still farther north to the mouth of the Yukon River and Seward Peninsula, agriculture can not be made a success except vegetable gardening on a comparatively small scale; grain can not be matured in that region. Considering the agricultural possibilities as a whole, it may be stated that wheat growing is precarious and corn growing impossible; tender vegetables, such as tomatoes, cucumbers, melons, peppers, etc., can not be grown out of doors in Alaska.

Turning to a further consideration of Governor Strong's Report to President Wilson, we meet with other interesting subjects:

Aids to Navigation.—Speaking of the need of more lights and other aids to navigation, Governor Strong says that this demand was more than emphasized during the summer of 1913, inasmuch as "three passenger and freight steamers having been totally wrecked, while a number sustained minor accidents, due to the insufficiency of lights and other aids to navigation and the lack of surveys of some of the inland channels and bays of Southeastern Alaska. In one instance a loss of thirty-one lives occurred, when on August 17 the steamship State of California struck an uncharted rock in Gambier Bay, Frederick

Sound. The vessel sank in three minutes. Fortunately, the wreck of the other two steamers entailed no loss of life.

"An immediate survey of all uncharted waters of the Alaska Coast should be made, and there should be resurveys in a number of places. The general importance of such aids in these northern waters can not be questioned. The commerce of the Territory is large and is steadily increasing, especially in the southeastern section, and installation of lights and buoys is to be regarded as a matter of great economic as well as of humane importance. Accidents to shipping are of annual occurrence, notwithstanding the steady increase in the number of lights and buoys in the past several years. In the fiscal year ended June 30, 1913, there were established in these waters fifteen new lights; five lights were converted from oil to acetylene-gas burners; two beacons were established; nine buoys provided in new locations; and four float lights were installed in Wrangell Straits."

It is noted in this connection that the national government is now taking steps to meet all requirements in connection with navigation and commerce in Alaskan waters. This naturally is a part of the government's great program for the commercial and industrial development of Alaska. The same is true relative to the cable service, which in the recent past has suffered serious interruptions.

Labor Conditions.—Governor Strong has this to say concerning labor conditions in Alaska: "Alaska during the fiscal year has afforded a fair field for labor. This is true especially in the southeastern section, where there has been an increase in the number of laborers employed in the mining and fishing industries. In the Fairbanks and Nome regions and in the mining districts of the Yukon, the past season was unparalled for drought, thus creating a smaller demand for mining and other labor. There have been no strikes during the past year among either mine or

fishery employees, and the prices of labor in the several parts of the Territory have remained practically stationary."

The Coal Lands.—At the risk of slight repetition it is considered important to include Governor Strong's observations on this subject: "With a constantly increasing demand for coal, not only for domestic use, but for industrial purposes as well, the vast coal-bearing areas of Alaska are still (1913) withheld from development. It is not deemed necessary here to enter upon a discussion of the causes that have produced this condition. These have been told and retold many times during the past years. To say that the industrial development of Alaska, on a scale commensurate with the extent and variety of its resources, depends upon the development of the coal fields, is but stating a fact that is exceedingly trite. With practically unlimited quantities of the best quality of bituminous, semi-bituminous, and anthracite coals within the Territory, for many years its people have been compelled to import nearly all the coal needed for domestic fuel and for industrial purposes, from foreign countries, largely from British Columbia, and not infrequently from Japan and Australia. During the past summer the not altogether edifying spectacle of a foreign ship discharging foreign coal for the use of the United States Government was witnessed at Unalaska. However, this is not an unfamiliar sight in Alaska. A strike of coal miners in British Columbia, which has been in existence for nearly two years past, has caused the coal-supply situation to become acute in some sections of Alaska, which are dependent upon that country for coal.

"From an economic and industrial standpoint it may also be pointed out that if the coal areas of Alaska were developed a tremendous impetus would be given to quartz

mining in nearly every section of Alaska. It is a well-known fact that in Alaska are immense deposits of metalliferous ores of various kinds which can only be worked profitably if coal and coke are obtainable at reasonable prices. The cost of both these products is now so great that development of many of these ore bodies is out of the question. Given a cheap fuel supply, smelters would be built and the ore treated at home with coal mined and coke manufactured within Alaska; mining would be stimulated vastly and trade and commerce would be greatly extended; prosperous industrial communities would be created and the population of the Territory would increase rapidly.

"The principal coal measures of the Territory are found in the third judicial division—in the Bering River and Matanuska regions—and there are also extensive deposits in the fourth judicial division, on the Nenana River, and in the second judicial division, at Cape Lisburne and Chicago Creek. In the Fairbanks district, on the Tanana River, quartz mines are just beginning to be developed, and unless cheaper fuel can be readily obtained there the industry will be seriously handicapped or perhaps abandoned. The Nenana coal fields are distant from the quartz-producing section about 50 miles. At this time an inferior quality of wood, which is now used exclusively for fuel, costs, delivered at the mines, $15 per cord, and the ore must carry high values to stand the cost of fuel. A similar condition exists in the Seward peninsula region, northwestern Alaska, where a large number of power dredges are employed in alluvial mining. Some of these are compelled to resort to the use of gasoline and fuel oil from the California oil fields. This statement applies to some parts of southwestern Alaska, where fuel oil is also used. If Alaska coal could be obtained, these operators would be enabled to save many thousands of dollars yearly, the scope of their operations would be largely extended, employment would be given to many more men,

and generally industrial and business conditions would be greatly improved.

"The people of Alaska are firm in the belief that the present administration will in the immediate future adopt a liberal policy that will have for its object the opening of the coal fields, or a part of them, on lines that will insure a permanent supply of coal at reasonable prices, without the danger of a monopoly either in producing or selling.

"In Alaska, patents have been granted up to 1914, to only two coal-land claimants. These patents were issued for claims carrying an inferior quality of coal. Patents for coal lands have been applied for in the Bering River and Matanuska sections, but none have been granted, while many applications have been canceled. Some of these applications were no doubt fraudulent, but it seems inconceivable that all were tainted with fraud, when it is a well known fact that a number of those who applied for patents were reputable and honorable men. It would, therefore, seem that not only the ends of justice would be subserved, but the coal situation clarified, were these coal claimants, who located land strictly within the law as it existed at that time, to receive patents therefor. In this connection it is well to state that 95 per cent of the residents of Alaska have no interest, directly or remotely, in the coal question, only in so far as its solution would enable them to obtain a cheaper fuel, which has been denied them pending the settlement of the alleged rights of these coal-land claimants. The people suffer, while the years pass, awaiting the time when they shall be permitted to mine and use their own coal.

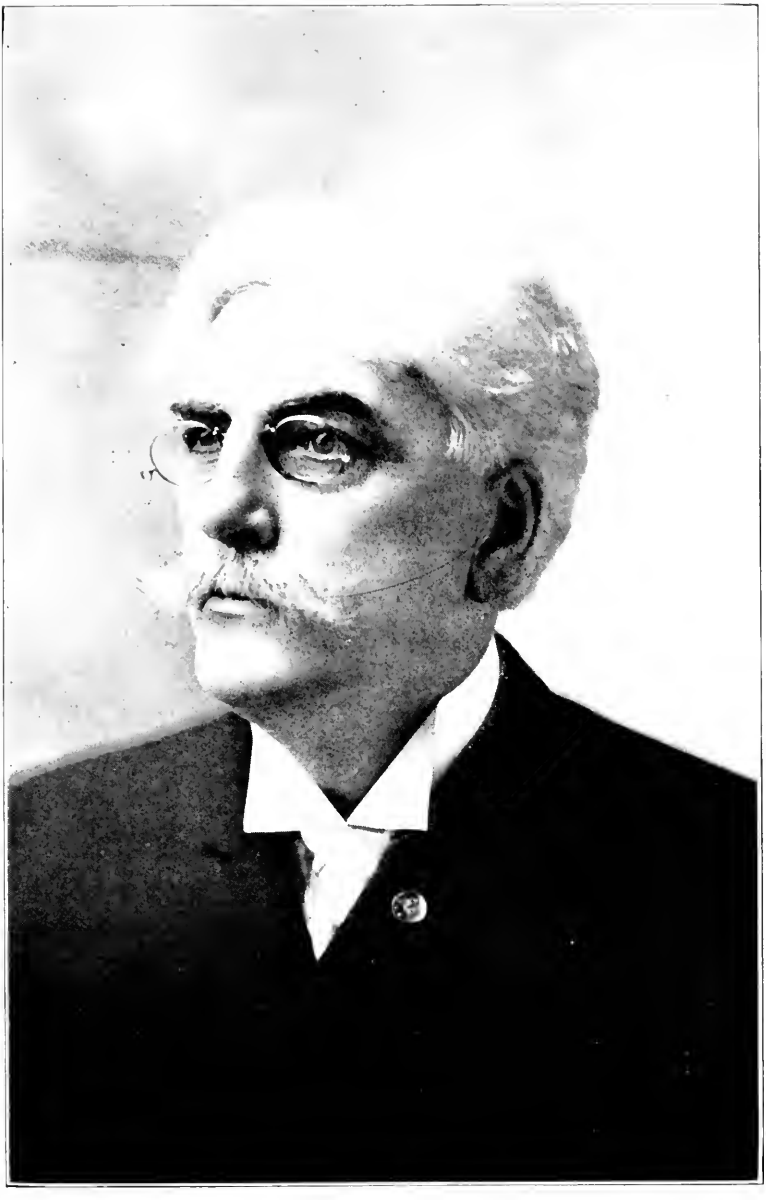
"With the coal mines of Alaska developed and producing, the people of southeastern and southwestern Alaska would be enabled to buy their coal for not more than $8 per ton, and the people of northwestern Alaska and the interior, at prices not to exceed $10 per ton or

less, allowing fair profits for the cost of mining and transportation.

"The importation of coal into Alaska from the States and from foreign countries during the last fiscal year amounted to 102,169 tons, valued at $492,301. Of this, 60,600 tons, valued at $279,788, was foreign coal, and 41,569, domestic, valued at $212,523. The coal importations, domestic and foreign, during the fiscal year 1912 were 71,452 tons, valued at $365,551. The market prices at which coal has been sold in Alaska during the past 14 years range from $150 a short ton in Nome in 1899, to $10 in Juneau, and $13 in Skagway in 1913. In Nome the established price is about $20 per ton; at Cordova, $17.50; Unalaska, $15; Wrangell, $14; and Ketchikan, $11.50."

In the face of these conditions, it is gratifying to note, as is elsewhere in this volume more fully explained, that the National Government has adopted measures to open the coal fields of Alaska on a plan which completely will relieve this unfortunate situation at the earliest possible date.

Public Schools.—"The number of schools for white children outside of incorporated towns was increased by 6 during the fiscal year, and there was a decrease of 1 at Tanana, which town was incorporated in December, 1913. There are now 26 schools, employing 37 teachers, with a total enrollment of 943 pupils. The present school law provides that there shall be at least 20 white children of school age in a community outside of incorporated towns before a school can be established, and I earnestly recommend that the number be reduced to 15, as in districts where there are fewer than the prescribed number, the children are deprived of the great American heritage of education, and a gross injustice is done them. The future welfare of the Territory demands that its children



HON. J. F. A. STRONG—GOVERNOR OF ALASKA
Photo courtesy E. L. Hampton.

shall receive the educational advantages such as can only be provided by good schools. The allotment of a maximum sum of $1,000 for the construction and equipment of a schoolhouse is altogether inadequate, and it should be increased to $2,500, so that good buildings and not shacks can be provided.

"A law was passed by the Alaska Legislature at its recent session which provides for the compulsory education of white children and those of mixed blood, living civilized lives, in the Territory between the ages of 8 and 16 years, residing within 2 miles of any school, outside of incorporated towns, where the school to which such child is entitled to admission is maintained. Similar provision is made in the law for the compulsory education of native children and children of mixed blood, not leading a civilized life, between the ages of 8 and 16 years, where such children reside within 1 mile of a United States public school.

"The Territorial legislature has memoralized Congress to enact legislation for the creation of a board of education and a board of examiners, with not less than two school superintendents for white children in the Territory, together with an appropriation to defray expenses of the proposed boards. Amendments to the Alaska school laws embodying the proposed changes in the present law were transmitted to the Congress with the memorial. I recommend that these amendments be enacted into law, so that the efficiency of the schools may be increased, the standard raised, and a uniform course of study secured."

Water Powers.—Among the great natural resources of Alaska, of which little has been heard, are the water powers of the southeastern and southwestern sections of the Territory which are undeveloped, while millions of dollars are being expended for hydroelectric purposes in other countries for the manufacture of electrochemical

products. The utilization of the water powers of Alaska for manufacturing purposes should meet with the approval of all conservationists, because it would be the "application of common sense to common problems for the common good." The many water powers found in southern Alaska are such as to present those essentials which must be reckoned with when hydroelectric plants are the objects to be attained. These essentials embrace: A large amount of power the year around; accessibility to the market and location for transportation of products; proximity of raw products to be used.

One of these water powers is now being developed at Speel River, about 35 miles southeast of Juneau, the purpose being the establishment of a large electrochemical and industrial plant, whose scope will be the manufacture of carbides from lime and coke, sulphuric acid from pyrites, pig iron from clinker iron, pulp from wood and sulphur, nitrates from the air, cyanides and fertilizers, explosives, treatment of zinc and lead ore, manufacture of potash, silica, and aluminum from feldspar, zinc and lead salts, potassium and fertilizer from kelp, etc.

That there is a field for a large electrochemical industry is shown from a consideration of the raw materials to be had and the demand for them when put into marketable shape. With regard to the supply of raw materials, there are practically unlimited quantities near at hand, including timber, lime, sulphur, and many other materials used in the manufacture of electrochemical products. Suitable fuel will be obtained from the Alaska coal mines when they are opened, or from British Columbia. Such an industry will stimulate prospecting all along the coast of southern Alaska, and it will supply a market for the gold, silver, copper, lead, and zinc ores and concentrates. It is doubtful if the electrochemical plants of Norway or Niagara will ever be a strong competitor in Pacific coast markets to a plant located on deep water in a sheltered harbor of

southeastern Alaska, 1,000 miles north of Puget Sound, whose location will permit shipments of products to be made from the plant by barges to Puget Sound and San Francisco, or by steamers direct to any foreign port.

The Legislature.—An election was held on November 5, 1912, for members of the territorial legislative assembly, the establishment of which was provided for in the act passed by Congress and approved August 24, 1912. The legislature consists of 24 members, 8 in the Senate and 16 in the House. Two senators and four representatives were elected from each of the four judicial divisions. The legislative assembly held its first session beginning March 3, 1913, and lasting 60 days. The sessions will be held biennially hereafter. Considerable legislation of a constructive character was enacted. The first law passed extended the elective franchise to such women in the Territory as have the qualifications of citizenship required of male citizens. The work of the legislature as a whole was such as to amply demonstrate the fact that, in the wise exercise of such powers as have been granted, the legislature can perform many useful functions which will contribute to the improvement of local affairs. Eighty-four laws were passed, embracing a wide range of subjects, together with 71 memorials and resolutions touching matters of interest to the people of the Territory upon which the legislature is without power to act.

Commerce.—The following table is a summary of the total commerce of Alaska for the fiscal year ending June 30, 1913:

Shipments of domestic merchandise from the United States to Alaska	$20,179,547
Shipments of foreign merchandise from the United States to Alaska	647,715

Shipments of domestic merchandise from Alaska to the United States	23,006,246
Shipments of foreign merchandise from Alaska to the United States	620,431
Shipments of domestic gold and silver from the United States to Alaska	1,239,045
Shipments of domestic gold and silver from Alaska to the United States	14,707,027
Shipments of foreign gold and silver from Alaska to the United States	4,290,246
Imports into Alaska	982,271
Domestic exports from Alaska	1,452,546
Foreign exports from Alaska	25,445
Total	$67,150,519

Mail Service.—The mail service of interior Alaska, as well as at some other portions of the Territory, continues to be unsatisfactory. This is especially true of the Yukon River region during the open season of navigation. The service during the winter is much more dependable than that of the open season. The people residing in the Iliamna district of southwestern Alaska are practically deprived of all mail facilities, and it is recommended that a mail route be established from the most convenient point to Iliamna. Speaking generally, a liberal policy in the matter of mail service should be inaugurated in a country such as this, where, under the most favorable conditions, there is much isolation. The men and women who are factors in the development of this Territory, those who are the sappers and miners in the advance of civilization and progress, are surely entitled to the utmost consideration at the hands of this great Government.

This chapter includes a greater part of the substance of Governor Strong's able production of the Alaska of today, which certainly is worthy a place in these permanent records.

CHAPTER XV.

CLIMATE AND RESOURCES.

ALASKA IN THE NORTH TEMPERATE ZONE—THE TEMPERATURE RECORDS OF THE SEASON IN VARIOUS LOCALITIES—CLIMATIC DISTRICTS—RETARDING AND ADVANCING GLACIERS—MINERAL AND OTHER RESOURCES—SUMMARY OF ALASKAN PRODUCTIONS—AGRICULTURAL LANDS—THE WATER POWERS.

ALTHOUGH in various parts of this volume the subjects of climate and resources are somewhat frequently, and, in a measure, incidentally referred to, it is considered expedient, especially as to the climate of Alaska, that the most important interests touching the habitability and other natural advantages of the country, should be assembled in a continuous connection for the general reference accommodation of readers. The compiler of this work has determined that in this particular effort, as in all other features, there shall be left in the minds of readers no doubt whatever of the reliability of the data supplied. To this end he here presents a condensation of the Report of the Railroad Commission on these important subjects:

Though Alaska is often loosely referred to as an Arctic province, yet nearly three-quarters of its area lies within the North Temperate Zone. Geographic position and extent relative to oceanic bodies, together with relief, have brought about physical conditions producing strong contrasts in climate between different parts of the Territory. Three general climatic provinces, each of which in turn

includes a number of subordinate provinces, are recognized.

The first is the maritime province lying adjacent to the Pacific Ocean. This has a heavy precipitation (50 to 190 inches), comparatively high mean annual temperature (40 degrees to 48 degrees Fahrenheit), cool summers (mean temperatures 50 degrees to 55 degrees Fahrenheit), and mild winters (mean temperatures 20 degrees to 35 degrees Fahrenheit). It has small variations of annual temperatures compared with the interior provinces, the records showing from —12 degrees to 84 degrees. The second is the inland province lying beyond the coastal mountains, with a continental climate characterized by semi-aridity (precipitation 9 to 15 inches), comparatively warm summers (mean temperatures 50 degrees to 58 degrees Fahrenheit), and cold winters (mean temperatures zero to —15 degrees Fahrenheit). Its most striking feature is the extreme annual variation in temperatures, which are from —76 degrees to 90 degrees Fahrenheit. The mean annual temperature varies from 15 degrees to 27 degrees Fahrenheit. The third province includes the region tributary to the Arctic Ocean, which, according to a few records, has a precipitation of only about 6 to 8 inches, an average summer temperature of from 40 degrees to 45 degrees Fahrenheit, a winter temperature of about —10 degrees to —16 degrees Fahrenheit, and an extreme variation, according to a few records, of —54 degrees to 60 degrees Fahrenheit.

The climate of the coastal province is comparable with that of Scotland and the Scandinavian Peninsula, in Europe, but is somewhat warmer. That of the inland region is not unlike the climate of Alberta, Saskatchewan, and Manitoba, in Canada. The northerly province bordering the Polar Sea, is the only one in which Arctic conditions prevail.

Central Alaska, or the region here specially under consideration, lies in part in the Pacific maritime, in part in the inland climatic province. It includes Cook Inlet

and the Susitna Valley and the Copper River Basin, whose climate, however, resembles that of the inland region lying north of the Pacific mountain system. Climatic records in central Alaska are, at best, but fragmentary, and hence all statements in regard to temperatures and precipitation, etc., must be regarded as only approximately accurate.

The precipitation of southeastern Alaska varies from about 147 inches at Ketchikan to less than 30 inches at Skagway. While there is but little snow near sea level, there is a very heavy fall in the mountains. At White Pass the winter snow fall is about 25 to 30 feet, but is probably less than four feet on the Chilkat summit. Records show that the mean annual number of days on which precipitation occurs in southeastern Alaska varies from 85 at Skagway to 235 at Ketchikan. The mean temperatures of the three summer months in this province vary from about 50 degrees to about 55 degrees Fahrenheit; of the three winter months from 20 degrees to 30 degrees Fahrenheit, while the mean annual temperature is between 40 degrees and 48 degrees Fahrenheit. The highest recorded summer temperature in southeastern Alaska is 92 degrees Fahrenheit; the lowest winter temperature —4 degrees Fahrenheit.

In the coastal region, stretching from Katalla to Seward, the average temperature for the three summer months is about 51 degrees Fahrenheit; of the three winter months from 20 degrees to 30 degrees Fahrenheit. The lowest temperatures recorded in this region are —14 degrees Fahrenheit; the highest 82 degrees Fahrenheit. Incomplete records show an average annual precipitation varying according to locality from 54 inches to 135 inches. The precipitation is about 127 inches at Katalla, 132 inches at Cordova, 135 inches at Childs Glacier, Copper River, 74 inches at Valdez, and 54 inches at Seward. The records indicate an average at different localities of from 90 to 240 days in which some precipitation occurs. The total snowfall is about 5—8 feet at Seward, 12 feet at Valdez, about 6 feet on the Trail Creek along the Alaska Northern Railroad,

about 30 feet at Childs Glacier on the Copper River Railroad, and about 15 feet at Thompson Pass, crossed by the Military Road from Valdez.

Cook Inlet has quite a different climate from that of the outer coast line. Here the precipitation is only 25 to 40 inches, with a snowfall of 4—5 feet. Some precipitation occurs on about 100 days in the year. The mean annual temperature varies greatly in different parts of this region, being from 33 degrees to 42 degrees Fahrenheit, while the average temperature of the three summer months is about 53 degrees Fahrenheit; of the three winter months about 10 degrees to 25 degrees Fahrenheit. The highest recorded summer temperature is 87 degrees Fahrenheit; the lowest winter temperature, —40 degrees Fahrenheit.

The climate of the lower Susitna and of the Matanuska valleys differs again, both from that of Cook Inlet and of the outer coast line. Here there are a very few records, but the summers are known to be warmer than on Cook Inlet and the winters are probably milder. The precipitation is small, one year's records at Chickaloon, in the Matanuska Valley, indicate a total of only 10 inches, but this was probably an unusually dry year. The lowest temperature recorded at this locality during the same period was —12 degrees Fahrenheit; the highest 84 degrees Fahrenheit.

The lower Copper River Valley has much the same climate as that of the coast, but ascending the river above Tiekhel a gradual transition to inland conditions is noticed. There are no records at Chitina, but the precipitation is known to be small, the summers warm, and the winters cold. At Kennicott, the inland terminal of the Copper River & Northwestern Railroad, the snowfall is about four feet, and the extremes of temperature recorded are —31 degrees and 76 degrees Fahrenheit. This station is 2,000 feet above sea level and close to a glacier. At Copper Center the total precipitation is about 10 inches, and the snowfall about 3 feet. Extremes of temperature of —50 degrees and 85 degrees Fahrenheit have been

recorded. The average temperatures of the three summer months are about 55 degrees Fahrenheit, and of the three winter months about 10 degrees Fahrenheit. It is estimated that the snowfall at Paxons, near Isabel Pass, is between three and four feet, and the total precipitation somewhat greater than at Copper Center.

The total annual precipitation in the upper Yukon Basin varies locally from 10 to 16 inches. At Fairbanks it is about 11.5 inches, at Eagle 12 inches, at Dawson 13 inches, at Fort Gibbon, the mouth of the Tanana, about 14 inches. The snowfall in this district is from three to five feet. It is reported that the snowfall in the upper White River basin is only two feet. Some precipitation occurs for about 80 days in the year. The mean temperature for the three summer months at Fairbanks is about 56 degrees Fahrenheit; the mean temperature for the three winter months about —12 degrees Fahrenheit; the mean annual temperature about 25 degrees Fahrenheit. A minimum temperature of —70 degrees Fahrenheit is recorded, and a maximum of 90 degrees Fahrenheit. The precipitation on the lower Yukon and Kuskokwim is about 17 to 20 inches. The average summer temperatures are a little lower than those at Fairbanks, and the winter temperatures are about the same.

The subject of prevailing winds along the coast, though important, can only be touched upon in this writing. In general it may be said that the severest storms along the central part of the Pacific seaboard of Alaska are from the south and southeast. These are more frequent from October to March than during the balance of the year. One of the most important climatic features of the coast of Alaska to shipping are the severe winds which blow in and out of the valleys, that traverse the coast ranges, and their connecting fiords. These blow toward the land in summer and toward the sea in winter. The severest are the outward winds, which are most common during January, February, and March, when velocities of 60 and 70

miles an hour are said to be not infrequent. Where a harbor or roadstead lies in the tracks of such winds they will seriously interfere with shipping. Examples of these winds are found at Lynn Canal, Bering River, Copper River, Lowe River, and Valdez Glacier, Resurrection River near Seward, and at Iliamna Bay. The fogs in summer and the snowstorms in winter also at times delay vessels navigating the Alaska coast.

The experience of those long resident in Alaska has shown the climate to be very healthful. No extremes of cold or heat occur along the Pacific seaboard. The excessive rains characteristic of many parts of this district are, to be sure, disagreeable, but experience demonstrates the fact that they have no adverse effect on health. It must be remembered, too, that the excessive precipitation is by no means universal in this maritime belt. It has been shown that at Skagway, for example, the total precipitation is less than 30 inches, and at Seward about 54 inches. Probably the most trying feature of the coastal climate is the strong winds which blow in the winter from the valleys traversing the coastal barrier.

The Cook Inlet and Susitna regions have a climate similar to that of the interior, and warmer summers than those on the coast, with less precipitation. The same holds true of the Copper River Basin. Of the Yukon it may be said that the summers are cool and that bright clear weather prevails most of the time. The aridity of the climate makes the extreme temperatures of winter easy to resist. All who have lived in this inland region are agreed that the winter climate is far more healthful than in many parts of the States where the temperature is higher, but where there is an excess of humidity. Residents of the interior have no fear of the extreme cold that often prevails during the winter months. The winter journey between Fairbanks and Valdez is made by men, women and children and offers no serious hardships except when storms are encountered.

The heavy snowfall on the seaward slopes of the coastal mountains is the only serious climatic obstacle to the operation of railways in Alaska. There is, however, also a marked fluctuation in the run-off, which affects cost of construction and maintenance. With the opening of spring the winter snows melt rapidly, with a corresponding rise in the watercourses. The danger to bridges and trestles is increased by the presence of ice, which may not only act directly against structures, but may also cause floods by forming temporary dams which may break and precipitate a sudden flood with ice cakes down the valley below.

The glaciers of the Pacific mountain system also affect railway location and cost of construction and operation. Some of the mountain passes otherwise available for railways are covered with glacial ice and hence cannot be utilized. Glacial streams are heavily charged with sediments and subject to great fluctuations, and their channels are constantly shifting. Moreover, lakes often form within the glaciers, or in the tributary valleys behind the face of the glacier, and the breaking of the ice dams holding them precipitates vast volumes of water into the valley below that may cause serious damage to railway structures.

Most of the Alaska glaciers are retreating, but some have advanced during the last few years. Therefore railways projected close to the front of glaciers always, to a certain extent, are in danger of damage by the advance of the ice. Moreover, if a railway be projected across a moraine, it may be found on excavation that ice occurs underneath what appears to be simply a mass of gravel and glacial detritus. If such conditions are encountered, the ice will thaw and will entail a continuous charge for maintenance of grade. In considering the effect of glaciers on railway location, construction, and maintenance, it should be remembered that they occur only in the Pacific mountain system and chiefly on the coastal slope.

Another effect of climate on railway construction and maintenance is the frozen condition of the ground which

prevails in much of the inland region. At Fairbanks the alluvium is in many places frozen to bedrock, ground frost having been met with to a depth of over 300 feet. It is to be noted that unless the cover of moss and vegetation is stripped, only about 18 to 24 inches of the surface thaws during the summer. The ground is, however, not everywhere frozen in the inland region. The beds of the larger watercourses are usually unfrozen, and this also holds true of the gravel benches along the valley walls and other deposits of alluvium which are drained. The talus-covered slopes of the valleys are generally frozen, and a cut made into them leads to thawing, and this brings about landslides that may much increase the cost of construction and maintenance.

No permanent ground frost occurs along the Pacific littoral, and the same probably holds true of most of the Susitna and Matanuska basins. There is considerable permanently frozen ground in the Copper River Valley, especially along the foothills and slopes of the Alaska Range. In the Yukon Basin permanently frozen ground is the rule, except under conditions described above.

Resources.—The mineral wealth of Alaska is at present its most important resource, but the Territory also includes extensive tracts of farming and grazing lands and many water powers. Excellent timber occurs in southeastern Alaska, while the inland forests are valuable for local use. There are also valuable fisheries along the Pacific seaboard which, while they will not furnish tonnage for the railways, yet affect the transportation problem by furnishing additional business for the steamers connecting with proposed coastal terminals.

The developed mineral resources of Alaska include gold lodes and placers, copper, tin, and silver deposits, together with petroleum, marble and gypsum. There are also extensive fields of bituminous and lignitic coal and

some iron ores, which are practically undeveloped. In addition to these, silver-lead, zinc, antimony, quicksilver, and other ores, and peat, graphite, asbestos, and mica have been found.

Gold lode mining has been carried on in southeastern Alaska since 1882, and is a large and well-developed industry. The value of the total lode production is about $57,000,000, of which $4,600,000 should be credited to 1912. Copper mining began in 1900 and has made rapid strides during the past few years. The total copper production is about 90,000,000 pounds, valued at $13,145,000. Of this, 28,940,000 pounds, valued at about $4,630,000, represents the output of 1912.

Placer mining, begun at Juneau in 1880, was extended to the Yukon Basin in 1886. No very important discoveries of placer gold were, however, made in Alaska until after the Klondike rush of 1898. This brought a large number of people into the Territory and led to the finding of gold at Nome in 1898, at Fairbanks in 1901, and in the Innoko-Iditarod region in 1908. Meanwhile the other smaller districts were developed, notably those of the Yukon, the Copper, and the Susitna basins. The total gold output of all the placer mines has a value of $145,000,000, while the placer-mine output of 1912 has an estimated value of $12,000,000. Silver has been recovered, incidental to gold and copper mining, to the total value of about $1,800,000. The value of the output of tin, marble, gypsum, petroleum, lead, etc., to the close of 1912 is about $1,000,000.

The exploitation of coal deposits on Cook Inlet in 1854 by the Russians was the first attempt at any form of mining within the Territory. Though public attention has for several years been focused on the coal deposits of Alaska, no coal mining has been carried on except that of exploring lignitic deposits for local use, which was begun thirteen years ago. Large sums have been spent on surveys, development work, etc., in the Bering River and Matanuska fields. In spite of all this activity the total

output of coal in the Territory up to the close of 1912 is insignificant, being less than 40,000 tons. During this period upwards of 1,500,000 tons of coal have been imported into the Territory.

To sum up, Alaska has produced to date mineral wealth having an aggregate value of $229,000,000, of which about $22,000,000 is to be credited to the year 1912. This output is remarkable, considering that large mining operations are practically confined to the coastal region, easily accessible to ocean transportation, and that the vast mineral wealth of the interior, except the richest of the gold placers, is almost untouched.

The resources of the entire Territory having been briefly considered, it remains to deal more specifically with those of central Alaska, comprising that part of the Territory here under consideration. An outline of these resources will here be presented.

Gold placers, copper and gold lode mines have been operated in central Alaska, and silver has been recovered incidentally to gold mining. There has also been a small output of coal and petroleum. Of the kinds of mineral deposits which are practically undeveloped, there are extensive coal fields, silver-lead ores, tin and antimony deposits, etc. In addition to these, some iron ore deposits have been found, but their commercial value remains to be proven.

Auriferous gravels are very widely distributed in central Alaska, and their exploitation has yielded gold to the value of nearly $90,000,000. Most of this has been taken from deposits which were very rich, for the high cost of operating here prevented the exploitation of the more extensive deposits of lesser gold tenor.

The high cost of mining in the interior has in a large measure deterred the prospector from searching for auriferous lodes, as only the richest and most favorably situated of such deposits could be profitably exploited under present conditions. Gold lodes have, however, been found in many parts of the province and have been successfully

mined in the Kenai Peninsula, in Willow Creek district of the Susitna Basin, and in the Fairbanks district.

The copper deposits of central Alaska are among its most important resources. The only developed copper district is that of the Chitina Valley, from which one mine began shipments in 1911. Considerable development has also been done on copper deposits which lie in a belt stretching from Nabesna River to White River. This field gives promise of becoming an important producer when rendered accessible by a railway. Copper deposits have also been found in other parts of the province, but about these less is known.

The coal fields of central Alaska are extensive and include some of the best coal of the Territory. High-grade steaming and coking bituminous coals as well as some anthracite are found in the Bering River and Matanuska coal fields. Much of this coal is crushed and will furnish a large percentage of slack, and in many instances the coal beds have been so deformed as to prevent their profitable mining. While the percentage of the coal beds that can be profitably mined can only be determined by actual exploitation, yet the fact remains that these two fields contain much workable coal of a higher grade than any now known in that part of the North American continent tributary to the Pacific Ocean. Though the high-grade coals, so far as known, are limited to these two fields, lignitic coal is widely distributed. The Nenana field, lying about 60 miles southwest of Fairbanks, is the largest of the lignitic coal fields, but a similar grade of fuel has also been found in the Susitna Basin and reported in the upper Kuskokwim Basin.

There are large tracts of arable and grazing lands in central Alaska for the most part unutilized, because of the lack of transportation. The census of 1910 shows that there were 2,660 acres of improved farm lands in Alaska, most of which is in the province here under discussion. Up to the present time hay and potatoes, with a variety

of garden vegetables, have been the chief crops. In 1910 nearly $100,000 worth of potatoes and $100,000 worth of hay were produced. Oats, barley, and rye can be ripened in many parts of the Territory. Up to the present time only a small amount of wheat has been ripened, but it seems certain that this grain can be successfully raised, at least in the Tanana and Susitna Valleys.

The largest areas of agricultural lands are located in the Susitna, Tanana, and upper Kuskokwim valleys, and there are smaller tracts in the Copper River Valley and in other parts of the province. Considerable profitable farming has been carried on near Fairbanks, where a local market is reached by wagon roads. A number of homesteads have been taken up near Knik, in the Susitna region, and more would be entered if there were any means of getting products to market. Agricultural land in Alaska is not likely to yield any crops for export for a long time to come, but with the increase of local markets following the mining development after railway construction, farming communities will spring up at many localities.

In addition to the farming lands there are much larger areas of good grass land, and cattle raising is likely to become an important industry in parts of this field. With the decrease of the western ranges in the States, Alaska may before long be drawn upon for beef and mutton. The reindeer is another source of food supply in Alaska. Domesticated reindeer have been successfully raised in Alaska for upward of 30 years, the herds now aggregating about 40,000 head. The coastal barren grounds of Bering Sea and the Arctic Ocean furnish the most extensive reindeer pastures of the Territory. Reindeer moss also grows abundantly on the uplands above the line of good timber and grass in many parts of central Alaska. It is conservative to state that Alaska has pasturage for several million reindeer.

The water powers of central Alaska are chiefly limited to the high ranges and the adjacent foothills. Their dis-

BIG CATCH OF SALMON IN WATERS OF ALASKA
Photo copyright by F. H. Nowell.

SEALS ON PRIBILOF ISLANDS, BERING SEA
Photo by Curtis & Miller.

tribution is in a large measure controlled by the distribution of rainfall. Water powers are most abundant on the seaward slope of the coastal ranges, but are also found on both slopes of the high ranges lying further inland.

CHAPTER XVI.

THE TRANSPORTATION ISSUE.

THE ALASKA ROAD COMMISSION AND ITS GOOD WORK—THE LAND ROUTE FROM FAIRBANKS TO NOME—THE ALASKA RAILROAD COMMISSION—THE BEGINNING OF A NEW DEPARTURE—WORK AND RECOMMENDATIONS OF THE COMMISSION—THE COMMISSION TELLS THE WORLD OF THE GREAT VALUE OF ALASKA—TRANSPORTATION DEVELOPMENT UP TO 1913—THE NEW ORDER.

THE reader, in addition to what he previously may have known, now possesses a somewhat complete knowledge of the natural resources of Alaska, and, in part, of their earlier development. But as to the latter, we have yet to cover the greater part of that progress. Inasmuch as Alaska presents a great commercial problem, the question of transportation, both inland and external to the Territory, but affecting its development is primary; and it is admitted that anything like a complete understanding of the transportation interests of the country requires a study of the topography of the territory, the inland navigable waters, the practical railroad routes, other land transportation routes, the various ocean routes connecting the possible ports of the territory, with Puget Sound and Pacific Coast cities, the commerce, industries, climate, population, resources of the country, and the roads, trails and land and water arteries of travel already in use, as well as those yet to be adopted.

It is not my purpose to enter upon an historical account of this much delayed development to any great extent,

but it may be observed that the government investigation of this subject was begun in 1904, when by act of congress the Alaska Road Commission was appointed, and its work placed under the direction of the War Department. This board, therefore, is composed of army officers, and Colonel W. P. Richardson has been its executive officer since its creation. The work of the board has been the location, construction and maintenance of military and post roads, bridges and trails.

Capt. R. H. Stretch, assistant secretary of the Alaska Bureau of the Seattle Chamber of Commerce, in one of his many compilations condensing official reports on the progress of this commission, says:

"In 1906 by special act of Congress a bill was passed authorizing the survey of a land route from Fairbanks to Nome under the direction of the Alaska Road Commission. This survey really initiates the work of the government investigation of the trans-Alaskan routes. Reconnaissance and surveys were continued during 1907 and 1908 by engineers under the direction of the Alaska Road Commission, who investigated all routes into and through the interior. As a result of these investigations the routes from Valdez and Chitina to Fairbanks and from Haines to the international boundary were improved by the construction of wagon roads, and the route from Kern Creek through the lower region of the Susitna Valley and into the Kuskokwim and Innoko valleys and northwesterly on to the Seward Peninsula and Nome was improved by the construction of a winter trail. Chitina is on the line of the Copper River and Northwestern Railroad, 131 miles from Cordova. Kern Creek is the present terminus of the Alaska Northern Railroad, seventy-two miles from Seward. The route from Haines is the one selected by the Alaska Midland Railroad Company for their projected railroad to the interior and Fairbanks."

In the fall of 1912, by act of Congress the Alaska Railroad Commission was appointed. The membership of this commission follows: Jay J. Morrow, Major, Corps of Engineers, U. S. Army; Alfred H. Brooks, U. S. Geological Survey; Leonard M. Cox, civil engineer, U. S. Navy, and Colin M. Ingersoll, consulting engineer.

This movement was the beginning of a new departure in transportation progress in Alaska. "Briefly the duties of this commission were defined by the act of Congress to examine railroad routes from the seaboard to the coal fields and to the interior and navigable waterways, and to recommend in respect of most available routes for railroads in Alaska, which will best develop the country and the resources thereof for the use of the people of the United States."

After visiting Alaska and making extensive personal observations, taking a vast amount of evidence as to the practicability of routes and the resources of the country, the commission reported, recommending the immediate construction of railway lines as follows: Chitina to Fairbanks, 313 miles; Bering River coal branch, via Lake Charlotte, 38 miles; Kern Creek to Susitna Valley, 115 miles; Matanuska coal branch, 38 miles; Susitna Valley to Kuskokwim, 229 miles—at an estimated total cost of $35,611,000.

It is observed that should the recommendations of this railroad commission be carried out and these lines be built, the consummation will go a long way towards solving the Alaska transportation question. The proposed termini are about 300 miles apart. "Each line would open a separate empire as large as the State of Texas, and would by no means be a competitor of the other. The one would open up the Bering and Nenana coal fields, the mineral areas of the Copper River Basin and the

mineral and agricultural areas of the Tanana. The other would open the Matanuska coal fields, the placer mining and agricultural industries of the Kenai Peninsula, the Susitna, Iditarod and Kuskokwim valleys, besides bringing the north and northwestern regions measurably nearer open ports."

In these recommendations the report of the commission states that, "The commission is unanimously of the opinion that this development should be undertaken at once and prosecuted with vigor; that it cannot be accomplished without providing the railroads herein recommended under some system which will insure low transporation charges and consequent rapid settlement of this new land and the utilization of its great resources. The data presented shows that the United States possesses in Alaska a frontier territory of great size and of wonderful industrial possibilities. The commission believes that its climate is favorable to permanent settlement and to agriculture; that its mineral resources are vast and as yet but little exploited; that its population is sparse, but only by reason of its inadequate transportation facilities, and that its people are of the same type of hardy pioneers that have carried the United States frontier to its present limits."

It may be noted that, aside from the roads and trails built along the Seward, Valdez, Cordova and Haines routes into the interior, all other roads and trails have been constructed to aid the development of the various mining camps, and have been of most valuable service. There is not, at the present time, June, 1914, a through railway line to the interior of Alaska. But there are proposed railway routes, parts of which have been constructed and some of these operated. The railroads and wagon roads of the present date are shown in the following table:

RAILROADS.

	Miles
White Pass and Yukon Route	20½
Copper River and Northwestern	196½
Alaska Northern	72
Nome, Seward Peninsula Road, Solomon River Road (not operated)	124
Tanana Valley Railway	45
Yakutat (cannery)	12
Cook Inlet (coal, not operated)	8½
Katalla (abandoned)	6
	484½

WAGON ROADS AND TRAILS

Wagon roads	847
Winter sled roads	645
Trails	1569
Trails, staked for winter only	450
	3511

"All these railroads were constructed by private capital and the wagon roads and trails by the Government, the latter at a cost of $2,205,000, or only $630 per mile. Compare the above distances with the Scandinavian Peninsula, about half the size of Alaska, with more than 8,000 miles of railroads, and Norway, not one-quarter the size, with 15,000 miles of roads, as against 847." There was no railroad construction going on in Alaska in 1913.

The White Pass and Yukon route from Skagway to Dawson lies entirely in Canadian territory, with the exception of twenty and one-half miles of railway from the seaboard to the boundary, at the summit of White Pass. At Whitehorse, 111½ miles from Skagway, the railroad connects with river steamers on the Yukon River for Dawson, there being no towns of importance between these points. From Dawson, Fairbanks may be reached by boats during the open season of about five months.

The Alaska Northern Road was projected to open the Matanuska coal field, with Fairbanks as its ultimate terminus, but on the reservation of all the coal lands it fell into financial difficulties and work was abandoned. Its present terminus is Kern Creek, on Turnagain Arm of Cook Inlet, seventy-two miles from Seward, its ocean terminus. As

projected it would also have opened up the agricultural and mining lands of the Susitna Valley, passed close to the Nenana coal fields, and would have been only slightly longer than the Copper River route to Fairbanks.

The Copper River and Northwestern Railroad, having had strong financial backing, and a valuable copper mine as an objective point, in addition probably to an eye on Fairbanks in the future, was completed to Chitina, in the Copper River Valley, a distance of 131 miles. From Chitina a branch sixty-five miles long of lighter construction was built to the Kennicott Mines, the entire line costing approximately $20,000,000, including the abandoned work toward an ocean terminal at Katalla, near the Bering coal fields. In winter, stages run from Chitina to Fairbanks on a tri-weekly schedule of seven days. All the other short lines were built to serve purely local industries.

At this writing, June, 1914, railroad work in Alaska is at a standstill, but activity on this line now is beginning under the immediate control of the National Government, the new Alaska Government Railway bill having become the law of the land; and as the Congress is pressing forward the work of enacting comprehensive land and coal legislation, it is plain that a new era of development is being inaugurated.

A year or two in advance of the passage of the new Government Railway bill by Congress, Captain Stretch wrote: "It is only with the construction of at least two trans-Alaskan railroads reaching from open harbors on tidewater into the vast interior of Alaska, with numerous branches as feeders, that the wonderful resources of Alaska can be developed and made to serve the uses of man. This is a work of so great a magnitude and cost that without great inducements it cannot be undertaken by private capital. These roads must be constructed either by the Government or by Government aid. The method is for our people to decide, and it must be decided without further delay.

"With the construction of these roads and the building of the numerous branches as feeders, and with a liberal policy of inducement and a spirit of encouragement toward the pioneer and pioneer capital, Alaska will pour into the lap of our people a stream of wealth not only of gold, copper and the precious metals, but also of fish, agricultural products, meats, furs and coal, that will have no compeer.

"Alaska has a future that cannot be pictured by the most enthusiastic optimists. A country that has made such a showing with a mere handful of men under the most adverse and restrictive conditions offers untold possibilities. The construction of two trunk railway lines will result in the opening up of an empire nine times as great as the State of Washington and over nine times as rich in natural resources. Its extent and wealth has never been approached by any frontier land. Here should be a future of the greatest prosperity, and it is the duty of our people to see that Alaska secures the rational development which it has so long been denied.

"Our day of reparation is now at hand. Our united efforts will be crowned with a success that will mean an awakened empire of the North—Alaska, Our Frontier Wonderland."

And now that this coveted program is to be carried out by the construction of these lines by the National Government, and by their operation under the management of the same authority, we confidently may expect to realize all that is predicted in the foregoing quotations. Alaska now enters upon the third period of its life,—a period of new opportunities and abounding prosperity. As will later be seen, Seattle, in a wonderful interrelationship, now is beginning to experience a similar departure. Now we are to have a new and greater Alaska, and by the same token, the people will realize the new and greater Seattle.

CHAPTER XVII.

TOPOGRAPHY AND TRANSPORTATION ROUTES.

Topography—The Arctic Portion of Alaska—The Territory South of the Endicott Range—The Pacific Mountain System — The Yukon and Kuskokwim Valleys—Open Bottom Lands and Gently Rolling Uplands—The Mighty Rivers and Basins—The Harbors—Routes of Travel.

THE Report of the Alaska Railway Commission, submitted to the President in January, 1913, contains a somewhat connected, and of course, a reliable account of the present transportation routes, river navigation accommodations, railroads existing at that date, main routes of travel, wagon roads of the country, which, at the risk of slight repetitions is here condensed for the benefit of the student of this New Wonderland. Knowing the source of this particular compilation, the reader will be in a position to place a proper estimate upon its value.

To begin with, a brief statement of the topography of the country is desirable and is given in this place. Alaska, as already noted, is a territory of great size, about one-fifth that of the total area of the United States. About a quarter of its area lies north of the Endicott Range, which itself is north of the Arctic Circle. This portion of the territory is Arctic, and it alone presents the bleak and frozen aspect popularly associated with Alaska. South of this range in Alaska, there is an area greater than that of all the states east of the Mississippi and north of the Ohio

River and Mason and Dixon's line, which is as capable of high development as many well-settled and rich countries.

The Pacific Mountain System fronts the coast, extending from British Columbia in a huge arc and tailing out in the Alaska Peninsula. This system is widest in the several ranges which divide Central Alaska from Southern Alaska, just north of Prince William Sound, and stands as a barrier separating the comparatively small coastal valleys from the two great inland valleys of the Yukon and the Kuskokwim, which themselves are separated by a comparatively low divide. Both these great valleys may be described as regions characterized by broad open bottom lands and gently rolling uplands.

The Yukon River, draining the greater of these basins, enters the Bering Sea at a latitude which prohibits the use of the stream as a connection with ocean-borne commerce excepting during three summer months. The same may be said of the Kuskokwim, though ocean commerce may reach its mouth for an additional month. Both of these rivers have difficult entrances; that of the Yukon being a shifting channel of little depth across mud flats; and the entrance to the Kuskokwim, while deep enough for the smaller ocean steamers, is extremely tortuous and not well known. Once inside, however, each presents a long stretch of navigable water for the ordinary river boat. The Yukon is navigable up to White Horse in Canada, about 2,200 miles, and its greatest tributary, the Tanana, is navigable without difficulty to Chena, near Fairbanks, and at times has been navigated much farther, though with difficulty. The Kuskokwim is navigable to the Forks, about fifty miles above the Takotna, or about 650 miles from the mouth. Both of these streams have navigable tributaries which extend their scope as transportation routes, and together provide about 5,000 miles of navigable waters in the two systems. The open season is about three to three and a half months, and although short, and though navigation is subject to occasional brief interruption in places by low

water, there is a possibility of their utilization as transportation routes in the development of the two great valleys that will suffice for years to come.

There are other lesser valleys with navigable waters. Of these the Copper and Susitna are the most important. These two rivers are more important as offering the best possibilities of penetrating the coastal range by rail lines than for purposes of navigation. The Copper River breaks through the Chugach Range, but with a slope so steep as to make navigation difficult and hazardous, though not impossible. It is believed that the transportation possibilities of the stream are not worthy of serious consideration, although some stretches of it may be used to some extent for local business. The Susitna, in its lower reaches, is navigable for river boats, though its entrance from Cook Inlet is difficult. It has possibilities of assisting as a transportation route on a small scale.

There are a few other minor streams which are now navigable for short reaches and will continue to be so used, but they may be dismissed from consideration with the statement that they have no important bearing on the large problem of transportation in the Territory.

A number of good harbors along the Pacific seaboard of Alaska are now connected with nearby inland points by railroads and trails, or by wagon roads and trails only. All these harbors as far west as Cook Inlet are open throughout the year, and are from 1,000 to 1,400 statute miles from Puget Sound ports. At present summer steamboat service of about six trips a month is maintained with the more important of these ports, and in addition some freighters carry coal and other supplies north and bring back cargoes of fish and ore. The ports of Southeastern Alaska have more frequent service. During the winter the service is continued, but is less frequent. During the summer, of about three and a half months, ocean steamers

make the trip between Puget Sound and St. Michael and Nome. There is also an occasional steamer to the mouth of the Kuskokwim and other points in Bering Sea.

Continuing the substance of the Railroad Commission Report, it is noted that at the present time the interior of Alaska is most conveniently accessible during the three or four summer months, June to September inclusive. Fairbanks, the center of the Yukon-Tanana basin may be reached by two routes. The first involves a 1,000-mile steamer trip from Seattle, through the inland passage, to Skagway, then 110 miles of rail over the White Pass to White Horse, the head of Yukon navigation. A transfer is here made to a Canadian river steamer which reaches Dawson, 460 miles downstream. From Dawson an American steamer is used to Fairbanks, a further distance of 1,000 miles. This route is used chiefly for high-class freight and passengers.

Most of the freight, however, for Fairbanks is shipped to St. Michael by ocean vessels. Here it is trans-shipped to river steamers which are exposed to the open sea before entering the mouth of the river. These steamers carry the freight up the Yukon and Tanana rivers. The mileage of this route is about 2,700 miles of ocean travel from Seattle and about 1,100 miles of river travel, and usually occupies about a month. All rates are high, which is accounted for by the short season, expensive fuel and cost of trans-shipping on both routes. The valley of the Kuskokwim is not so well served. Small steamers reach Bethel, and a few river steamers distribute freight to river points nearest the camps, whence they are hauled, usually, during the winter season.

Probably the most important road constructed by the board of road commissioners is the one over which the Alaska Railroad Commission traveled. This road

connects Fairbanks with Valdez on the coast and with Chitina on the Copper River Railroad, and forms the present winter route between Fairbanks and the outside world. On this route, throughout the winter months, a regular stage company operates a line carrying freight, passengers, and mail. In the early winter and in the spring wheel stages are used, but through most of the winter season horse sleds carry the traffic. As the service is expensive, the freight and passenger rates are high.

The Kuskokwim Valley and the Iditarod section, immediately adjacent thereto, are much more poorly provided with transportation than the Yukon and Tanana valleys. A winter sled road has been built from the end of the Alaska Northern Railroad at Kern Creek, on Turnagain Arm, up the Susitna Valley, and across the divide into the Iditarod region.

To sum up, all Alaska has less than 500 miles of railway in nine disconnected systems, less than 1,000 miles of wagon road, 600 miles of winter sled roads, and less than 2,000 miles of trails, with 5,000 miles of important navigable waterways which are closed by ice for about three-quarters of the year, and this in a country comparable in size, resources, and climate to Norway and Sweden.

From this brief statement it may be seen that transportation is difficult and expensive. The great interior can only be reached in the winter at an expense almost prohibitive except for high-class freight, and even in the short summer season transportation is sufficiently difficult to justify rates which might be considered excessive elsewhere.

CHAPTER XVIII.

STUDY OF RAILWAY ROUTES.

WORK OF THE RAILROAD COMMISSION OF ALASKA—ITS LABORS AND CONCLUSIONS—A SUMMARY OF THE SEVERAL PROPOSED ROUTES—IMPORTANT HINTS TO THOSE INTENDING TO ENGAGE IN ALASKAN INDUSTRY AND BUSINESS.

NEARLY every one who studies Alaska this year and next will do so from the point of view of routes of travel, primarily, as to railway routes, and, in a secondary sense, as to roads and trails. If one be interested in townsites, this will be the key to the solution of his problem. In short, no matter what the specific object may be, it will turn upon the questions of transportation and travel, and these interests, of course, must be governed by the natural distribution of the resources of the Territory, and the other problem of gradients. We all know that it is through the passes of the Pacific Mountain Range that a practical railway route, or routes must be sought and found.

This mountain system, says the Railway Commission Report, which fringes the coast line of British Columbia and stretches northward into Alaska, presents a formidable barrier to inland travel. It is a single range fifty to eighty miles wide along the boundary of British Columbia and Alaska, but broadens out as it enters the Territory, and reaches an extreme width of 200 miles, made up of a number of parallel ranges. The great interior valleys lie north of these mountains, and all the ice-free ports lie south of them.

Proceeding westward, the first pass which would develop other than wholly Canadian territory is now reached and traversed by the White Pass and Yukon Railway. Chilkoot Pass, almost adjacent, is higher and not feasible for railway development.

The next pass to the westward, says the Railway Commission Report, is the one which would be used by a railway route based upon either Pyramid Harbor, an arm of Lynn Canal, or Haines, a bay on the west side of Lynn Canal. The road would ascend the Chilkat River, whose headwaters are separated from streams flowing into the Alsek by passes about 3,200 feet high. Once over these passes, the route would follow a series of natural depressions parallel to the inland front of the St. Elias Range, traverse the broad flat divide between the White and Tanana basins, and follow the Tanana Valley to Fairbanks. The principal things that militate against it are that it is the longest of all proposed routes and that it lies in foreign territory for nearly half its distance to Fairbanks.

The next available pass would be that used by a route on Yakutat Bay as its terminus. This road would run southwestwardly for about fifty miles, to the mouth of the Alsek River, and ascend the Alsek Valley, reaching the Pyramid Harbor-Tanana route about 200 miles from the coast. This route is not available. Its harbor is indifferent. The resources along the route are somewhat inferior, compared to other lines. The topography is very rugged, and it also passes through Canadian territory.

Passing westward, the next route of access to the interior is afforded by the great Copper River Valley. Three general routes up the valley have been proposed: First, from either Cordova or Katalla, directly up the river; second, from Valdez across Marshall Pass and down the Tasnuna to the Copper River Valley, and, third, from Valdez over Thompson Pass and a lesser summit at

Ernestine, and thence to the Copper River at a point near Copper Center.

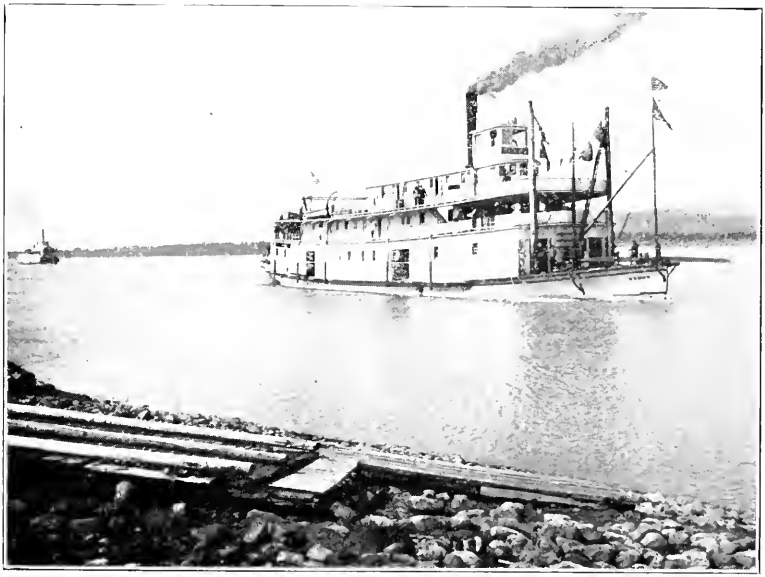
Along the first of these routes the Copper River and Northwestern Railway has already been constructed to Chitina, 132 miles from Cordova. It is the longest of the three routes, but has no grades to surmount, until the divide between the Copper River and the Yukon basins is reached. The other two routes, while shorter, have to surmount either an elevation of 1,860 feet at Marshall Pass, or one of 2,750 feet at the Thompson Pass, before the Copper River Valley itself is reached. All three routes follow practically the same line from Copper Center up Gulkana River and one of its tributaries, across the divide to the headwaters of Delta River, and down that stream and Tanana River to Fairbanks.

The headwaters of the Copper are separated by the Alaska Range from the valleys of the White and Tanana rivers, and there are possibilities that may be considered for connecting these valleys with a railroad system lying in the valley of the Copper River, by lines across the Alaska Range through Mentasta and Skolai passes.

The next available port is Seward, in Resurrection Bay. From this town the Alaska Northern Railroad has started the construction of a railroad which crosses the Kenai Mountains and reaches tidewater at its present terminus on Turnagain Arm, a branch of Cook Inlet. An extension of this railroad could reach the Copper River plateau by following up Knik Arm and Matanuska Valley over Tahneta Pass at an elevation of about 3,000 feet, and so reach the Copper River at a point near Copper Center. The Tanana Valley could be reached either by extension of this line as previously outlined or by Susitna River, from whose upper waters the headwaters of the Nėnana River may be most easily reached by Broad Pass, about 2,700 feet high. This road gives promise of allowing for a connection with the great Kuskokwim Basin through one of the passes leading from the headwaters of the

ALONG THE COPPER RIVER

Photo by E. A. Hegg.



ON THE YUKON RIVER

Photo by Curtis & Miller. Courtesy W. P. & Y. R.

Yentna, a tributary of the Susitna. Rainy Pass, about 2,950 feet high, seems to be most promising.

Upper Cook Inlet is closed by ice during the winter season. Were it not for this fact, a railroad based on some harbor in this inlet might be considered. As it is, it seems necessary that any route reaching Cook Inlet from the valleys of Susitna or Matanuska must be carried across the Kenai Mountains to Seward along the line of the Alaska Northern route, or by other passes to the westward of that line.

West of Cook Inlet, high and rugged mountains seem to bar any direct access to the Kuskokwim from the west side of this inlet, but toward the southerly end of the inlet these mountains are less difficult and the passes are low. The Iliamna Lake region offers a possible route from some such terminal point as Iliamna Bay into the Kuskokwim, and from that great valley possibly on into the lower Yukon from which it is separated by only a low watershed.

The Report of the Commission concludes as follows:

"The routes considered by the Commission fall into three classes:

"First. Those which reach the interior, but do not give economical access to either of the two principal coal fields. In this class are: The Skagway route; the Haines-Fairbanks route; the Iliamna-Kuskokwim route; the Valdez-Fairbanks route.

"Second. Routes which reach the coal fields only. In this class fall the routes from Katalla and Controller Bay.

"Third. The routes which reach the interior and at the same time will furnish economical transportation for the two coal fields. In this class are the Cordova-Fairbanks route; the Seward-Fairbanks route; the Seward-Innoko-Iditarod route.

"Of the routes that do not reach either of the principal coal fields, two have their coastal terminals in Southeastern Alaska, namely, at Skagway and at Haines-Pyramid Har-

bor. These two routes have much in common, but as between the two harbors, the location at Haines, with its possibilities of development on both sides of the peninsula, and with its good anchorage area, possesses advantages over Skagway.

"The Commission believes that a railroad will be built at an early date connecting Haines with the Canadian interior, for the development of local resources, and that the development of Central Alaska and adjacent portions of Canada will ultimately call for an extension of this line into the Tanana Valley and possibly on to the Seward Peninsula. The route presents many attractive features; but in common with the route based on Skagway, the mileage to Fairbanks is excessive, is partly in foreign territory, and as yet no high-grade coal has been discovered which can be conveniently served by either of these routes. The Commission therefore feels justified in confining its further considerations to the routes reaching the interior from ports on the Gulf of Alaska west of the one hundred and forty-first meridian.

"The third route, which does not give access to either of the principal coal fields, is the route from one of the harbors on Cook Inlet into the valley of the Kuskokwim. These harbors may be passed over with the statement that no railroad can be based on any of them that will assist in the development of the Territory as efficiently or as economically as can be done by lines reaching the coast farther north and east. They lie too far southwest to develop conveniently the known resources of the interior. The Commission, however, desires to state that Iliamna Bay or Iniskin Bay has possibilities for use as a terminal for a short line intended to develop the resources and industries of the immediately tributary region. This eliminates all routes to the interior that will not economically serve either of the two principal coal fields, excepting the route from Valdez.

"Valdez has a harbor inferior only to that of Cordova and about equal to that of Seward. There is no probability, however, of its being utilized as an outlet for either Bering River or Matanuska coal. The commission considered the possibilities of developing Matanuska coal by way of this port; but the haul involves the surmounting of two major summits (Tahneta and Thompson passes) and one minor summit (Ernestine), besides being longer in distance than the haul over the alternate route to Seward. It is not surprising, therefore, that operating costs are shown to be excessive. With industrial advancement, it is probable that Valdez will require the construction of one or the other of the lines connecting it with the Copper River Valley. The Thompson Pass route would also have value in case equitable trackage arrangements for traffic through to tidewater can not be effected by the proposed Chitina-Fairbanks road.

"This leaves for consideration the routes giving economical access to the two coal fields. Before discussing these routes, which are affected by the development of these fields, it is desirable to briefly consider the coal question.

"In the absence of information to the contrary, the Commission assumes that the coal deposits of the Bering River and Matanuska fields are on a parity as to quality of product and cost of mining. The heart of the Bering field lies about thirty miles from the coast at either Katalla or Controller Bay, about seventy-six miles from Cordova, and about thirty-eight miles from the existing tracks of the Copper River and Northwestern Railway. The heart of the Matanuska field is 187 miles from Seward, 115 miles from the present northern terminus of the Alaska Northern Railway. Both fields are reported to contain bituminous coal of good coking and steaming quality, in composition approximating the best coals of the eastern fields in the United States, but both are so folded and crushed as to add to the expense of mining and to much reduce the percentage of lump in the output.

"It has been shown by analyses of operation costs that these coals can probably be delivered at their respective terminal points at reasonably low figures per ton. These figures are based on an assumed output of about 500,000 tons annually, and include only transportation and terminal costs. * * *

"Controller Bay and Katalla each require for terminal development a first cost of construction that will assuredly be high and will certainly require high maintenance charges. Moreover, the completion of such terminal would offer harbor facilities very inferior to those that can, at little expense and at low maintenance charge, be had at Cordova. While the costs of transportation to these points are lower than that to Cordova, the Commission believes that, for the reasons cited above and discussed more fully elsewhere, it would be unwise to attempt harbor construction at either Katalla or Controller Bay at present. An additional and important reason for this decision lies in the fact that if either of these places were developed as a coal-shipping port all Bering River coal used in Alaska would have to be trans-shipped unless a line from Katalla to a junction with the Copper River Railway were built. It is evident that such a railway would serve, for the present at least, to make harbor construction at either Katalla or Controller Bay superfluous, for it would at once give the coal an outlet to tidewater at Cordova, as well as inland by the Copper River Valley.

"The Commission is of opinion that the routes based on Skagway, Haines, Iliamna Bay, and Valdez are eliminated for the lack of high-grade coal, and those based on Katalla and Controller Bay by the present unsuitable harbor facilities, which would be remedied only by difficult and costly construction. This reduces the discussion to the three routes which penetrate inland Alaska and at the same time give convenient access to the two coal fields. Two of these routes reach the heart of the Tanana Valley, one from Cordova and one from Seward. The third reaches

the Kuskokwim from Seward. The two routes into the Tanana will first be compared.

"After its study of all available harbors, the Commission is of the opinion that the one at Cordova is, without question, the best. It has no disadvantage not possessed by all, and one great advantage possessed by no other, namely, an ample area of good anchorage. Seward is evidently the seaport for the Matanuska coal and Cordova the logical outlet for the Bering River coal. The comparisons of transportation rates given in the foregoing data show that for an output of 500,000 tons annually it will cost $1.96 a ton more to haul Matanuska coal to Seward than it will to haul the Bering River coal to Cordova, and the analysis further shows that for double this output the additional cost will be $1.11. This places the Matanuska coal at such disadvantage that it could probably not be marketed at tidewater in competition with the Bering River coal.

"The Commission therefore recommend the construction of railway lines as follows:

1.	Chitina to Fairbanks	313 miles	$13,971,000
2.	Bering River coal branch, via Lake Charlotte	38 miles	2,054,000
3.	Kern Creek to Susitna Valley	115 miles	5,209,500
4.	Matanuska coal branch	38 miles	1,616,000
5.	Susitna Valley to Kuskokwim	229 miles	12,760,500

"In conclusion, it should be stated that the Commission is unanimously of opinion that this development should be undertaken at once and prosecuted with vigor; that it can not be accomplished without providing the railroads herein recommended under some system which will insure low transportation charges and the consequent rapid settlement of this new land and the utilization of its great resources."

CHAPTER XIX.

SOLVING THE TRANSPORTATION PROBLEM.

AN EDUCATIONAL CAMPAIGN TO ENLIGHTEN THE WORLD AND AWAKEN CONGRESS—LIGHT BEGINNING TO DAWN—A REBELLION OF LOYAL EARNESTNESS—THE OPPRESSION OF DELAYS—BREAKING DOWN OPPOSING BARRIERS—SECRETARY LANE'S ABLE REPORT—PRESIDENT WILSON'S FIRST MESSAGE ON ALASKA.

ASIDE from its wonderful scenic attractions, and its alluring invitations to sportsmen, the reader, from the foregoing, has gathered a more or less complete knowledge of Alaska as one would have found it in 1912, expressing to its parent Federal Government, a strong, and patience-exhausted demand for better transportation facilities. It easily is seen that because of its great distance from any central part of the United States, as well as the markets of the world; and owing to the somewhat inaccessible nature of the country, the problem of transportation became, from the very start, the all absorbing question with the pioneers of Alaska. It may be said that from 1897-8 to 1912, such efforts as were made to develop the newly discovered resources of Alaska were most severely overtaxed by transportation burdens,—burdens in the nature of a poverty of these facilities—and in the abnormal cost of such limited carrying conveniences as were available. This condition has not yet been removed, but, as we shall see, adequate measures now are in progress, well calculated to overcome it.

These measures, as is quite well known, are of a character which enables us to say that, within two years, at most, transportation accommodations will have been so far multiplied and cheapened that Alaska will have assumed a status of prosperity, such as will guarantee its early commercial prominence. It may be said that the struggle of the pioneers of Alaska for railroad transportation, through which the country passed between 1910 and 1914, in one of its phases, wore some of the milder colors of rebellion, but this aspect did not transcend the intensity of loyal earnestness. It was in the nature of the beginning of the end in which victory has been realized.

It ever has been characteristic of the history of human advancement, that pioneer settlements, which pitch the tents of progress a little further ahead, are neglected, and sometimes even oppressed by the indifference of the central power which they represent. This was true of the original American colonies to the extent that they broke away from the government of their source and set up in national business for themselves. The result of this incident of early American history now is visible in the existence of the United States of America. It has been true, to some extent, in the life of almost every outpost of civilization. Alaska has had this experience in a small measure only. Nevertheless Alaska has had to go through a most heroic struggle, with many privations, in order to bring the great resources of the country and the rights of its pioneer settlers to the attention and recognition of the national government and the people of the United States.

The passage of the Alaska Railway Bill, signed by President Wilson on March 12, 1914, is the outcome,—the victory of this struggle. Hence, a few brief observations of the salient features of this agitation, and its successful management, naturally form a proper feature of this volume. The opposition to Alaska, which sprung up in the East among the great interests, was to have

been expected. As long as the new land was esteemed to be only the abode of the precious metals, the great monopolies of the United States could see no danger to their domain from its development, but as soon as Alaska became fully identified as the home of inexhaustible high grade coal fields, the signal was given to "lock it up." The issue of supplying the United States navy on the Pacific with coal at once became a potential factor,—one which has delayed the development of Alaska at least ten years.

But "one by one the great influences which, for selfish reasons," says the Seattle Times of Sunday, March 15, 1914, "had opposed the development of Alaska were battered down. One by one powerful influences in the government were won to the cause. Senators, congressmen, governors, state legislatures, commercial organizations in all parts of the United States were brought to help the proposition. And even the leaders of the ultra conservation movement, which was largely responsible for the tieing-up of Alaska, and the injustice done the coal claimants, were brought into line for the railroad bill and the result is the logical consequence of the campaign begun more than three years ago. The government is to try an experiment in the Territory, and it is conceded that a government that is great and strong enough to build and operate a Panama Canal is amply qualified to build and operate a railroad in Alaska."

The reader is here reminded that the public attitude toward Alaska greatly changed in the sixteen years from 1898 to 1914. At the first date named, the word Alaska was synonomous with the other word, *gold*. In 1914, Alaska had come to be associated with ideas of transportation and commerce. This change had been wrought gradually, but the greater part of it was accomplished in the short period from 1910 to the beginning of 1914, and, particularly in the shorter space of time from December, 1913, to February, 1914. Probably the severe

want of transportation facilities felt in the Territory during the period from 1910 to 1914 had much to do with bringing the commercial possibilities of Alaska to the knowledge of the world.

It may be said that Alaska entered the fourteenth year of the Twentieth Century keenly suffering from the need of transportation facilities. The construction of trails and roads through the most frequented sections of the Territory had been accomplished. The building of a trunk line railroad to tap the valleys of the Tanana, the Susitna, the Kuskokwim and the Yukon, thus connecting the south coast with the interior water system, remained to be accomplished.

Two years ago, J. J. Underwood wrote in the Alaska-Yukon magazine, as follows: "Alaska has many ills. The Territory needs many things. But worse than anything else it needs transportation facilities. Every industry in the country, whether developed or to be developed, is dependent upon transportation. The great coal question, important as it is, is not more important than is transportation. The coal question is important only in so far as it will furnish tonnage for railroads. Without tonnage there will be no railroads, and without the coal sufficient tonnage is not forthcoming to warrant the further construction of railroads.

"Some people may think that the agricultural possibilities of Alaska are visionary, and that a railroad for the purpose of hauling agricultural products alone never will pay the interest on the bonds. The thought is not original. The same thing was said about the building of the Northern Pacific Railroad to the great Northwest territory. It is true that there were no profits in sight when the railroad was built. But the Government lent assistance that made it profitable. * * * Alaska has all of the necessary possibilities of development of latent resources to make it attractive to railroad builders. In the Tanana Valley alone, if the figures of Government experts are to be be-

lieved, there is a greater area of agricultural and grazing land than in all of the Scandinavian Peninsula, a country that supports a population of ten million people and feeds them on its own agricultural products. Prof. C. C. Georgeson, of the United States Department of Agriculture, is authority for the statement that Alaska contains at least sixty-four million acres of agricultural and grazing land, and he regards this as a conservative estimate. Basing his estimate on eleven years of observation and experimental work, Professor Georgeson says that Alaska will support a population of three million by agricultural pursuits alone, and a great many more if necessary, provided the proper means of transportation is furnished the settlers."

At the time the foregoing was printed, the pioneers of Alaska, and the people generally, did not expect to be compelled to wait two years and more before Congress would take definite action providing a railway transportation system for the new country, but they have had to suffer this period of delay. However, relief is now in sight, and the most promising feature of the new movement is that it is being carried forward by direct Government action.

From 1909, or even prior to this date, until 1912, or during the greater part of President Taft's administration, Alaska suffered from speculators and exploiters. It is not so said as a charge against the integrity or sagacity of Mr. Taft's policy, but rather to indicate that when measures were adopted to put a stop to spoliation, stagnation settled down upon the enterprise of that country, until a readjustment could be brought about. A transformation from the work of the designing monopolist to that of the honest, plodding, fair-minded developer is not easily wrought, and always is attended by business interruptions.

Concerning these things Franklin K. Lane, Secretary of the Interior, in his annual report to President Wilson, of 1914, well says: "There is a feeling in the West that its affairs and needs have not been given that considera-

tion at the hands of the National Government which they merit. The feeling is not confined to speculators or exploiters. It is the sentiment of many who are without selfish motive and regard the matter wholly from the standpoint of national growth. They point to the conditions which obtain in Alaska as unparalleled among people of our aggressive and nation-building stock.

"So, too, they are unable to understand why ways have not been found by which the great bodies of coal and oil lands, of phosphate and oil lands, may be developed, and the waters of the mountains made available for the generation of power and the redemption of the desert.

"There is one very simple explanation for the existence of this feeling. We have adventured upon a new policy of administering our affairs and have not developed adequate machinery. We have called a halt on methods of spoliation which existed, to the great benefit of many, but we have failed to substitute methods, sane, healthful, and progressive, by which the normal enterprise of an ambitious people can make full use of their own resources. We abruptly closed opportunities to the monopolists, but did not open them to the developer.

"I have said that we put into force a new land policy which caused dismay and discontent. Let me explain what I mean by this. It was, in fact, but a new application of an old policy. Congress has always been most generous as to the disposition of the national lands. One cannot read our land laws without being struck with the fixed determination which they show that it was wisest to be quit of our lands as quickly as possible. It might almost be said that the Government regarded its lands as a burden rather than an asset. We gave generously to our railroads and to the States. There was land for all, and it was the Government's glad function to distribute it and let those profit who could.

"There was no thought then of creating timber barons or cattle kings, or of coal monopoly. The sooner the land

got into hands other than those of the Government the better. And this generous donor was not so petty as to discriminate between kinds of lands, the uses to which they could be put, or the purposes which those might have who got them. Land is land, save when it contains minerals; this was roughly the broad principle adopted. To classify was a task too difficult, or not worth while. The lands would classify themselves when they arrived in individual ownership. And so the door was opened for monopoly and for fraud."

As the report just quoted points out, a reaction was inevitable, and this reaction has developed a new policy, one which declares that "land should be used for that purpose to which it is best fitted, and it should be disposed of by the Government with respect to that use."

Secretary Lane says that the largest body of unused and neglected land in the United States is in Alaska, and adds that it now is nearly half a century since we purchased this territory, and although with a white population of less than 40,000, and without having received more than casual concern from the Government, its mines, fisheries and furs alone have added to our wealth the splendid sum of $500,000,000. "For almost a generation," he says, "it was the rich harvest field of a single company. Individual fortunes have been made in that country larger than the price paid to Russia for the whole territory. How rich its waters are we know, because they have been proved, but how rich its lands are in gold and copper, coal and oil, iron and zinc, no one knows. The prospector has gone far enough, however, to tell us that no other section of our land today makes so rich a mineral promise.

"And in agriculture the government itself has demonstrated that it will produce in abundance all that can be raised in the Scandinavian countries, the hardy cereals and vegetables, the meats and berries on which nine million people live in Norway, Sweden and Finland. It has been estimated that there are 50,000,000 acres of this

land that will make homes for a people as sturdy as those of New England.

"This vast asset lies almost undeveloped. A territory one-fifth the size of the United States contains less than a thousand miles of anything that can be called a wagon road. It has a few inconsiderable stretches of railroad which terminate, with one exception, either in the wilderness or at a private industry. Only the richest of its mines can be worked, and one of its resources of greatest immediate value to the people, its coal lands, lies unworked.

"Why has not this land been developed? The frank answer is that we did not realize, until within a few years, that it was worth developing. As soon as we discovered its value as a national asset, we became alarmed and drew back, affrighted at the thought that we might lose it, or at least that it would become the property of those who would exploit it without respect to the public interest. Since then we have been waiting to make up our minds as to what wisely could be done. * * * But now, after a long pause, it would seem to be the sense of the people that we shall proceed at once and in a large way to deal with the problem of Alaskan development."

And Mr. Lane grandly submitted his recommendations as to what should be done, thus: "We have withdrawn Alaska from the too aggressive and self-serving exploiter. What have we to substitute as a safer servant of public interest? To this question I have given much thought, and my conclusion is that if we are to bring Alaska into the early and full realization of her possibilities, we must create a new piece of governmental machinery for the purpose. We should undertake the work in the spirit and after the method of a great corporation wishing to develop a large territory.

"In my judgment, the way to deal with the problem of Alaskan resources is to establish a board of directors to have this work in charge. Into the hands of this board,

or commission, I would give all the assets in the Territory, to be used primarily for her improvement—her lands, fisheries, Indians, Eskimos, seals, forests, mines, waterways, railroads—all that the Nation owns, cares for, or regulates. Congress should determine, in broad outline, the policies which this board, in a liberal discretion, should elaborate and administer, much as is done as to the Philippines. This board would, of course, have nothing whatever to do with the internal affairs of the organized Territory of Alaska, for it would exercise no powers save such as Congress granted over the property of the United States in Alaska."

On the transportation problem, Mr. Lane says: "I have already expressed to Congress my belief that it was wise for the government itself to undertake the construction and operation of a system of trunk-line railroads in Alaska. * * * The rates and the service of such railroads should be fixed with reference to Alaskan development—not with regard to immediate returns. The charges fixed should be lower for years to come than would justify private investment."

It is plain from the foregoing statements of Secretary Lane that a campaign of education as to the needs of Alaska already was bearing rich fruit, even before the close of 1913, and this is further emphasized by the message of President Wilson to the Congress of the United States, delivered on December 2, 1913, in which the keynote of a New Alaskan Period was sounded. In this message he said:

"A duty faces us with regard to Alaska which seems to me very pressing and very imperative; perhaps I should say a double duty, for it concerns both the political and the material development of the Territory. The people of Alaska should be given the full Territorial form of government, and Alaska, as a storehouse, should be unlocked.

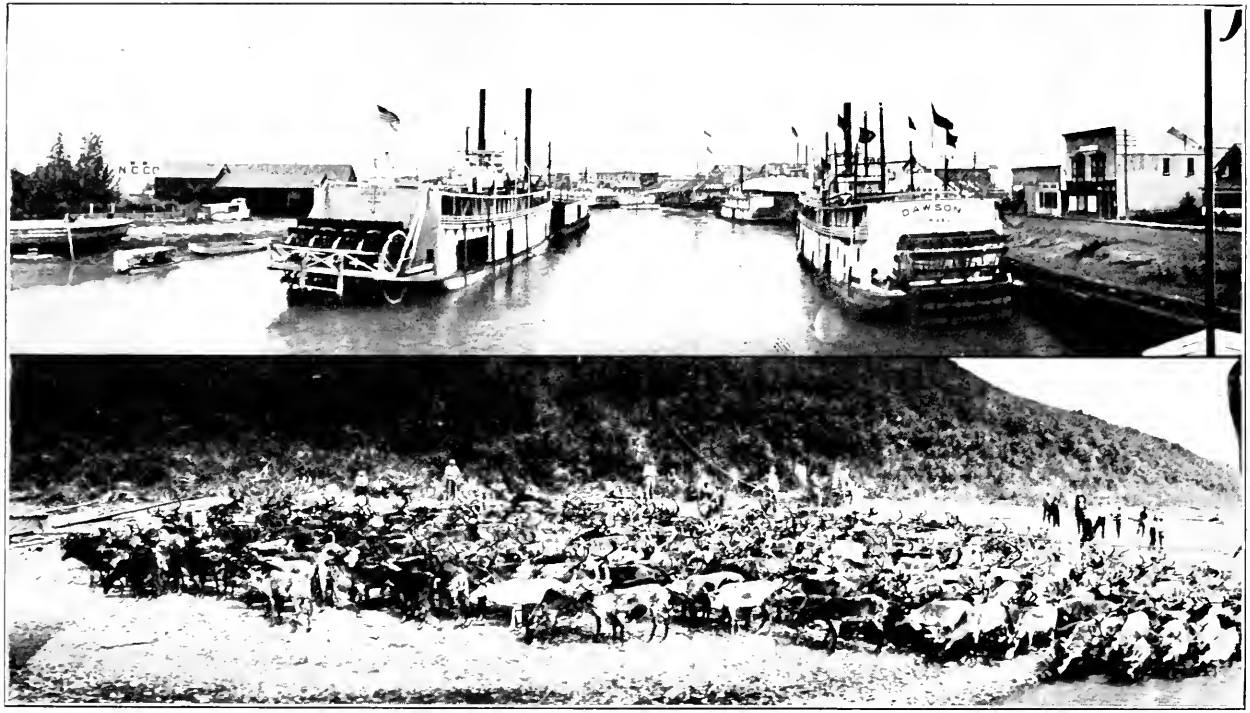
One key to it is a system of railways. These the Government should itself build and administer, and the ports and terminals it should itself control in the interest of all who wish to use them for the service and development of the country and its people.

"But the construction of railways is only the first step; is only thrusting in the key to the storehouse and throwing back the lock and opening the door. How the tempting resources of the country are to be exploited is another matter, to which I shall take the liberty of from time to time calling your attention, for it is a policy which must be worked out by well-considered stages, not upon theory, but upon lines of practical expediency. It is a part of our general problem of conservation. We have a freer hand in working out the problem in Alaska than in the States of the Union; and yet the principle and object are the same, wherever we touch it. We must use the resources of the country, not lock them up. There need be no conflict or jealousy as between State and Federal authorities, for there can be no essential difference of purpose between them.

"The resources in question must be used, but not destroyed or wasted; used, but not monopolized upon any narrow idea of individual rights as against the abiding interests of communities. That a policy can be worked out by conference and concession which will release these resources and yet not jeopard or dissipate them, I, for one, have no doubt; and it can be done on lines of regulation which need be no less acceptable to the people and government of the Nation at large, whose heritage these resources are. We must bend our counsels to this end. A common purpose ought to make agreement easy."

This campaign of education concerning the great natural resources of Alaska, and the as natural requirements for the speedy development of the country, constitutes an

important lesson in economic advancement—one of such great potentiality as to fully justify a somewhat lengthy account of it, which is given in the following chapter.



TOP—WATER FRONT FAIRBANKS. BOTTOM—GOVERNMENT REINDEER HERD.

Photos courtesy C. K. Sturtevant.

CHAPTER XX.

WONDERFUL CAMPAIGN OF EDUCATION.

SEATTLE CHAMBER OF COMMERCE ESTABLISHES A SCHOOL ON ALASKAN RESOURCES AT THE NATIONAL CAPITAL—A SIGNAL VICTORY FOR ALASKA—THE FAMOUS RAILWAY LAW OF 1914—THE BEGINNING OF A NEW ERA.

NOTHING could well be more in harmony with natural evolution than that the energies of the people of Seattle should be extended to supplement the forces of the pioneers of Alaska in their efforts to obtain better transportation facilities. This feature of potential relationship had characterized the development of the new Territory from the start, but it took new form in 1912, and assumed a still more formidable aspect at the close of 1913 and the beginning of 1914.

About the time the Railroad Commission was appointed, in which movement the people of Seattle took a leading part, the Seattle Chamber of Commerce began organizing for a campaign of education among the people of the nation, concerning the great value of Alaska resources. To this end it was determined to organize a Seattle-Alaska-Bureau, as an adjunct to the Chamber, and under its immediate control, with a full and attractive exhibit of the products and resources of the new Northland; and, further, to emphasize this exhibit with a program of Alaska literature distribution. This undertaking proved to be a wise one. The sequel shows that this organization and candid educational enterprise has achieved more for

the promotion of the interests of Alaska than probably all other agencies combined in that behalf.

Seattle had more than doubled its population and its industrial and commercial importance since the opening of Alaska by the discovery and development of its rich gold deposits in 1897-8, and its public spirited citizens realized that its future very largely depended upon the growth of the more northern country. Being situated in the position of the Gateway to Alaska for the outside world, the Puget Sound metropolis naturally was first to acquire a correct knowledge of the greatness of Alaskan resources, and to reach an understanding that the development of these natural riches and commercial advantages would become the source of great increase of national wealth, as well as the advancement of its own status.

Hence, it is easy to see what the material motive was which impelled the Seattle Chamber of Commerce to undertake the great educational campaign, on behalf of Alaska, in 1913-14. The Railroad Commission had done its work, as we have seen, and now important congressional legislation must be secured if this achievement was to count for anything in the way of actual progress in obtaining more serviceable transportation facilities for Alaska. It was well known that the needed legislation here referred to, if obtained at all, would have to be secured over the somewhat general prejudice of the Congressmen and United States Senators of the eastern portion of the country. This prejudice had become deep-seated, and somewhat firmly rested upon a general ignorance of the real value of Alaska, and upon private interests of the East which the development and marketing of Alaskan resources might impair.

The Seattle Chamber of Commerce quickly decided to take the splendid exhibit of the Alaskan Bureau to the National Capital, and there to set it up in proper quarters to function as an educational institution for the enlightenment of Congress, and, incidentally, of the people of the United States concerning the nation's northern Wonderland.

Many people were not a little astonished when it was discovered that this Alaska Exhibit, manned by able exponents of the work in hand, had been given a prominent place in the Senate office building of the National Capital.

The museum proved to be the one thing needful at the Nation's capital city. It was a splendid supplement to the literature of the bureau and was ably utilized as an educational force by a staff of workers, including J. L. McPherson, secretary of the bureau; Charles G. Heifner, Maurice D. Leehey, Will H. Parry, Falcon Joslin, William Pigott, John P. Hartman and others. The institution at once commanded a distinguished patronage. "The President called and lingered over the displays. The daily lectures were given to Representatives and Senators who had come to learn what Alaska was really like. Every fact they found backed up by governmental authority, and before their eyes were specimens brought from Alaska to prove that this is no Territory of ice and snow, but a wonderland of resources waiting only the facilities of transportation to enrich the country to which it belongs.

"As an example of the appreciation of this opportunity to learn about Alaska, Clay Tallman, head of the land office, arranged to send land office employes in groups of thirty a day to hear the lectures and visit the museum.

"In three months the museum accomplished its purpose. Better than any single effort it had dispelled the popular misconception of Alaska. To the men whose assistance was needed it had demonstrated that in the North was a Territory deserving a railroad and federal interest, promising rich dividends on governmental friendship. The huge King salmon, the raspberries and the strawberries, the grains and grasses were packed up again and sent back to their home in Seattle with a good work to their credit.

"Better than any amount of literature or word of mouth description of Alaska was a visit to this little

museum of the Alaska Bureau. To see was to believe. To describe it is to enter into the agricultural and mineral history of the country."

Speaking of this successful campaign, Capt. R. H. Stretch said: "To reach the people at large other means were necessary. For this purpose the pertinent facts in its library of 150 volumes were condensed into a ninety-page illustrated pamphlet entitled 'Alaska, our Frontier Wonderland,' of which 15,000 copies have gone into circulation since June, 1913, through the United States and as far east as London, Belgium and Russia. Every member of Congress and the press gallery of both houses, as well as public libraries and 2,700 of the principal newspapers in the United States, were supplied with copies during the past winter, while the daily demand both personally and by letter shows how thoroughly it has permeated every corner of the United States."

Thus, more than two years of educational agitation resulted in a splendid victory for Alaskan transportation interests, when President Wilson appended his signature to the Alaska Railway Bill at 3 o'clock in the afternoon of Thursday, March 12, 1914.

Thus, the history of the bill, if written in all its aspects, would of itself constitute a volume of considerable size, and a most instructive chapter in the evolution of human progress. This idea gives rise to the other of the history of Alaska as a whole, which has been suggestively epitomized by the Seattle Post-Intelligencer in the following form:

1728—Discovered by Vitus Bering, Danish navigator in Russian service.

1784—Russians made permanent settlement on Kodiak Island.

1867—Purchased from Russia by United States for $7,200,000.

1884—District government created.

1897—Gold discovered in Klondike.

1898—Construction on White Pass and Yukon Railway commenced.

1903—Government coaling station established at Dutch Harbor.

1904—Alaska Road Commission created.

1906—Commission surveys road route from Fairbanks to Nome.

1911—Made a Territory and Given Territorial Government.

1912—Alaska Railroad Commission appointed.

1913—Alaska Railroad Bill introduced in Senate July 2. Introduced in House in November.

1914—Bill passed Senate January 24. Passed House on February 18. Amended Bill passed by Senate on March 10. President Wilson affixes signature March 12.

Thus, a most important bill became the law of the land. It ranks next in pioneer importance to the Northwest "Ordinance of 1787," but this will not immediately become apparent. In a very few years, however, this initial transportation measure will have developed a Transformed Alaska, in such a way as greatly to enlarge the importance, material wealth, and commercial standing of the United States. Neither those having immediate charge of this legislation, nor the Alaskans, themselves, who, with their friends, exerted their utmost endeavors to assist them, yet realize the magnitude of the work accomplished.

This Alaska Railway Law is the advance measure of national legislation, which being followed by other enactments for which it at once will create a demand, will multiply, in many ways, the $35,000,000 made available for the development of transportation in Alaska, to more than as many hundred millions for similar purposes. It is the

beginning of a new era of progress and prosperity in what we call the far Northwest. As such, its functions can not be overestimated.

Such a measure is worthy a place large enough to present it in full in this volume, and this place here follows:

An Act to Authorize the President of the United States to Locate, Construct, and Operate Railroads in the Territory of Alaska, and for Other Purposes.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States is hereby empowered, authorized, and directed to adopt and use a name by which to designate the railroad or railroads and properties to be located, owned, acquired, or operated under the authority of this act; to employ such officers, agents, or agencies, in his discretion, as may be necessary to enable him to carry out the purposes of this act; to authorize and require such officers, agents, or agencies to perform any or all of the duties imposed upon him by the terms of this act; to detail and require any officer or officers in the Engineer Corps in the Army or Navy to perform service under this act; to fix the compensation of all officers, agents, or employees appointed or designated by him; to designate and cause to be located a route or routes for a line or lines of railroad in the Territory of Alaska not to exceed in the aggregate one thousand miles, to be so located as to connect one or more of the open Pacific Ocean harbors on the southern coast of Alaska with the navigable waters in the interior of Alaska, and with a coal field or fields so as best to aid in the development of the agricultural and mineral or other resources of Alaska, and the settlement of the public lands therein, and so as to provide transportation of coal for the Army and Navy, transportation of troops, arms, munitions of war, the mails, and for other governmental and public uses, and

for the transportation of passengers and property; to construct and build a railroad or railroads along such route or routes as he may so designate and locate, with the necessary branch lines, feeders, sidings, switches, and spurs; to purchase or otherwise acquire all real and personal property necessary to carry out the purposes of this act; to exercise the power of eminent domain in acquiring property for such use, which use is hereby declared to be a public use, by condemnation in the courts of Alaska in accordance with the laws now or hereafter in force there; to acquire rights of way, terminal grounds, and all other rights; to purchase or otherwise acquire all necessary equipment for the construction and operation of such railroad or railroads; to build or otherwise acquire docks, wharves, terminal facilities, and all structures needed for the equipment and operation of such railroad or railroads; to fix, change, or modify rates for the transportation of passengers and property, which rates shall be equal and uniform, but no free transportation or passes shall be permitted except that the provisions of the interstate commerce laws relating to the transportation of employees and their families shall be in force as to the lines constructed under this act; to receive compensation for the transportation of passengers and property, and to perform generally all the usual duties of a common carrier by railroad; to make and establish rules and regulations for the control and operation of said railroad or railroads; in his discretion, to lease the said railroad or railroads, or any portion thereof, including telegraph and telephone lines, after completion under such terms as he may deem proper, but no lease shall be for a longer period than twenty years, or in the event of failure to lease, to operate the same until the further action of Congress: *Provided*, That if said railroad or railroads, including telegraph and telephone lines, are leased under the authority herein given, then and in that event they shall be operated under the jurisdiction and control of the provisions of the interstate commerce

laws; to purchase, condemn, or otherwise acquire upon such terms as he may deem proper any other line or lines of railroad in Alaska which may be necessary to complete the construction of the line or lines of railroad designated or located by him: *Provided,* That the price to be paid in case of purchase shall in no case exceed the actual physical value of the railroad; to make contracts or agreements with any railroad or steamship company or vessel owner for joint transportation of passengers or property over the road or roads herein provided for, and such railroad or steamship line or by such vessel, and to make such other contracts as may be necessary to carry out any of the purposes of this act; to utilize in carrying on the work herein provided for any and all machinery, equipment, instruments, material, and other property of any sort whatsoever used or acquired in connection with the construction of the Panama Canal, so far and as rapidly as the same is no longer needed at Panama, and the Isthmian Canal Commission is hereby authorized to deliver said property to such officers or persons as the President may designate, and to take credit therefor at such percentage of its original cost as the President may approve, but this amount shall not be charged against the fund provided for in this act.

"The authority herein granted shall include the power to construct, maintain, and operate telegraph and telephone lines so far as they may be necessary or convenient in the construction and operation of the railroad or railroads as herein authorized and they shall perform generally all the usual duties of telegraph and telephone lines for hire.

"That it is the intent and purpose of Congress through this act to authorize and empower the President of the United States, and he is hereby fully authorized and empowered, through such officers, agents, or agencies as he may appoint or employ, to do all necessary acts and things in addition to those specially authorized in this act to enable him to accomplish the purposes and objects of this act.

"The President is hereby authorized to withdraw, locate, and dispose of, under such rules and regulations as he may prescribe, such area or areas of the public domain along the line or lines of such proposed railroad or railroads for townsite purposes as he may from time to time designate.

"Terminal and station grounds and rights of way through the lands of the United States in the Territory of Alaska are hereby granted for the construction of railroads, telegraph and telephone lines authorized by this act, and in all patents for lands hereafter taken up, entered or located in the Territory of Alaska there shall be expressed that there is reserved to the United States a right of way for the construction of railroads, telegraph and telephone lines to the extent of one hundred feet on either side of the center line of any such road and twenty-five feet on either side of the center line of any such telegraph or telephone lines, and the President may, in such manner as he deems advisable, make reservation of such lands as are or may be useful for furnishing materials for construction and for stations, terminals, docks, and for such other purposes in connection with the construction and operation of such railroad lines as he may deem necessary and desirable.

"Sec. 2. That the cost of the work authorized by this act shall not exceed $35,000,000, and in executing the authority granted by this act the President shall not expend nor obligate the United States to expend more than the said sum; and there is hereby appropriated, out of any money in the treasury not otherwise appropriated, the sum of $1,000,000 to be used for carrying out the provisions of this act, to continue available until expended.

"Sec. 3. That all moneys derived from the lease, sale, or disposal of any of the public lands, including townsites, in Alaska, or the coal or mineral therein contained, or the timber thereon, and the earnings of said railroad or railroads, together with the earnings of the telegraph and

telephone lines constructed under this act, above maintenance charges and operating expenses, shall be paid into the treasury of the United States as other miscellaneous receipts are paid, and a separate account thereof shall be kept and annually reported to Congress.

"Sec. 4. That the officers, agents, or agencies placed in charge of the work by the President shall make to the President annually, and at such other periods as may be required by the President or by either House of Congress, full and complete reports of all their acts and doings and of all moneys received and expended in the construction of said work and in the operation of said work or works and in the performance of their duties in connection therewith. The annual reports herein provided for shall be by the President transmitted to Congress.

"Approved, March 12, 1914."

Among the measures of national legislation for the promotion of Alaska development which were being advanced in both houses of Congress, as the first edition of this volume goes to press, is the Alaska Coal Land Leasing Bill. This measure was introduced in the House by Congressman Ferris of Oklahoma, and in the Senate by Senator Walsh of Montana. Both bills were understood to be administration measures. This legislation, if enacted, will provide "for the survey of the coal lands of Alaska; the reservation for the use of the national government of 5,120 acres of coal land in the Bering River field; and 7,780 acres in the Matanuska coal field; leasing for an indeterminate period to individuals or corporations, under such rules and regulations as the Secretary of the Interior may provide, tracts not exceeding 2,560 acres to any one concern, on a minimum royalty of 2 cents per ton, but each tract to be let to the highest bidder with a small annual rental beginning with 25 cents and increasing to a maximum of $1.00 per acre per annum, this annual rental to

apply on royalty for each particular year, which means that the per acre charge is merely a penalty for holding without working the same. It also provides granting permission to individuals to mine, without charge, for their own use, coal on small tracts at the discretion of the Secretary."

The bill also contains provisions for preventing combinations to control selling prices; royalties to be adjusted at the end of each twenty year period.

This bill is intended to promote development of the coal mining industry, insure competition, prevent monopoly and thus encourage the development of the many industries of Alaska by supplying fuel at the lowest cost to the ultimate consumer.

Other important measures to facilitate the development of Alaska are now, June 15, 1914, in progress in the Congress, and some of these, together with the general program of the National Government are referred to in later chapters of this effort. It is noted that national legislation on behalf of Alaska, at the date mentioned was in the making, having been slightly delayed by the "near war" troubles between this country and Mexico.

CHAPTER XXI.

CELEBRATING THE RAILWAY VICTORY.

Rejoicings in the Pacific West Over the Passage of the Government Railway Law—Expressions of Approval by the Railway and Marine News; J. E. Chilberg, President of the Seattle Chamber of Commerce and Other Leading Business Men—Series of Celebrations—Short History of the Bill.

NATURALLY so great a beginning in the new development of Alaska as the passage of the Railway Bill by the Congress of the United States, especially as the Territory had been tied up in various ways for several years, by the need of transportation facilities and a more liberal coal land policy, was calculated to inspire new hopes among the people of the Pacific Northwest. The event was reasonably the occasion for widespread demonstrations of approval, not only among the people of Alaska, who had patiently and impatiently waited so long for relief, but by the citizens of the whole Pacific Coast.

As noted elsewhere, Seattle had been transformed from a small to a great city, since 1897, or since the discovery of gold in Alaska, through the force of which its various other marvelous resources became known to the world. Seattle, as all well know, is the chief objective port from which the far greater part of Alaskan products must find distribution. Because this is true, the city has more than doubled its population and commercial importance since the New Alaska of 1898 began to grow in potential value in the knowledge of the people of the United States.

The bill already had become famous when it reached a stage of progress which left little doubt of its passage. This was partly due to the fact that a small army of Alaska and Seattle business men had camped at the National Capital for months to boost for the measure. At first, as noted elsewhere, the measure met with much opposition, but the giants arrayed on its behalf battered down the opposing forces, and by sound, peaceful, loyal arguments convinced Congress of the righteousness of their cause. The President and his Cabinet already had been convinced of the wisdom of the legislation here under consideration.

The potential and immediate value of the legislation thus secured, taken into consideration with the heroic, self-sacrificing campaign by which it was obtained, created a reasonable demand that the achievement should be heartily celebrated.

On the occasion of the victory, the Railway and Marine News of Seattle said: "The passage of the Alaska Railway Bill in each branch of Congress has brought forth universal approval throughout the Pacific Northwest and Alaska. In the Northern Territory celebrations were held at various points. The first news came by the Associated Press, which courteously telephoned prominent commercial bodies and others. Immediately upon its receipt by Railway and Marine News, the general office of the Marconi Wireless Telegraph was communicated with and the manager flashed the good news to all the ships and shore stations throughout the North Pacific Ocean, so that within a short time of the announcement of the passage of the bill through the House, practically all the ships plying between Puget Sound and Alaska and all the interior points had been apprised of the news. Every one takes a most hopeful and optimistic view of the situation and all classes of people look for the biggest revival in trade that has ever taken place in the Northwest and a united action with the elimi-

nation of all past differences and sectional feelings. * * * Too much credit cannot be accorded the Alaska Bureau of the Seattle Chamber of Commerce, which took the initiative and expended $32,000 for the purpose of transferring its Alaska exhibition to Washington and carrying on the splendid work. In this they received the cooperation and endorsement of commercial bodies on Puget Sound and in Alaska with the result that the bill was successfully passed in both houses."

Following are a very few of the expressions from men prominent in the West, as to what the passage of the bill means to Alaska and the Pacific Northwest:

Governor J. F. A. Strong of Alaska said: "All Alaska, irrespective of geographical divisions, rejoices over the passage of the railroad bill because it indubitably means the opening to development of natural resources now inaccessible or unused, including coal and agricultural lands, the cheapening of transportation costs to the great interior country and its development along substantial lines, and marks generally the dawning of a new industrial and commercial era for which the people of the Territory have waited long and patiently.

"Alaska's worth as a potential asset of the Nation has been established and it now remains for its people to act in unity that they may enjoy the fullest fruition of this wise and progressive legislation.

"Their thanks are due to the loyal friends both in and out of Congress for the intelligent campaign for the opening of the Territory to development and the fair fight made to attain the desired end."

J. E. Chilberg, president of the Seattle Chamber of Commerce, said: "With the enactment of the Alaska railroad measure the shackles are being broken from the pioneers and resources of the Northland. The railroad itself, while an enterprise of magnitude, is merely leading the way for opening resources, inviting settlement, stimulating

productions and bringing to the uses of the United States and the entire world the greatest store of natural wealth remaining undeveloped on the American continent.

"The enactment of the Railroad Bill is the forerunner of other equally essential legislation, making possible the settlement and development of Alaska, just as the construction of the road will lead to the sources of natural wealth of the Territory. Much in this direction remains to be done by Congress, and by the help of President Wilson's administration, without which it would have been impossible to secure the adoption of the railroad program.

"While no one factor can claim the credit for having wrought the transformation in the affairs of Alaska made possible by the attitude of the President and of Congress, it is a source of profound gratification to me that the efforts of the Seattle Chamber of Commerce have been primarily responsible for inaugurating a campaign coordinating the efforts, combining the energies, directing the influences and assembling the sources of information which have brought about a revolution in public sentiment and an understanding of the Northland by the President, his Cabinet and the members of Congress."

Fred W. Bert, Jr., president of the Seattle Commercial Club, expressed himself in these terms: "Nothing has occurred since the big gold rush to Alaska that means so much to that country and Seattle and the Northwest, as the passage of the Alaska Railroad Bill. How far reaching its benefits will be cannot be foretold or even estimated. We can, however, see in the immediate future the thirty-five millions the Government will expend turned over and over in the supplies needed by the people on the job and those serving them. We can see the immense coal beds tapped, starting a circulation of new revenues running into millions. We can see arable lands equal to the area of Denmark and Sweden under cultivation and causing exports and imports. We can see all manner of mining pushed most agressively because of the transportation

facilities to and from the section admitting heavy machinery to the interior and improving living conditions generally, and when the railroad taps the head of navigation of the Yukon we will practically have acquired a new empire. This much we can see—beyond staggers the imagination."

R. W. Baxter, vice-president and general manager Alaska Steamship Company and the Copper River & Northwestern Railway, of Seattle, made the following forceful remarks on the event: "I regard the proposed construction of railroads in Alaska by the United States Government as the most important factor possible in relation to the future growth and prosperity of the Territory. It is not necessary to here refer to the long period of stagnation brought about by lack of proper laws governing the control of the natural resources—that is a story of the past and might well be forgotten. With the Government's determination to take so important a part in the upbuilding of the Territory, every individual and every corporation is heartily in accord with the outlined program of industrial advancement. For years Alaska has been accorded, by the various steamship companies operating, a service which, in relation to the net returns, was far in advance of the industrial growth of the country and during the calendar year 1913, a period in which the industries of Alaska showed a decided loss, the steamship companies gave a grand total of 387 sailings from Seattle to ports of that Territory, some of these sailings being marked by only half cargo and sometimes less than half a passenger list. I merely bring this out because those who are unacquainted with conditions have overlooked this important factor and have regarded Alaska as being almost entirely isolated and without adequate steamship service.

"Railroads have been started in the interior and would have been greatly extended had it not been for the condition existing already referred to. The statement made in the East that it will be impossible to successfully build

HON. JAMES WICKERSHAM—CONGRESSIONAL DELEGATE FROM ALASKA

and operate railroads in Alaska, is refuted when one studies the Copper River & Northwestern Railway, opened in March, 1911, extending 196 miles into the interior and at the present writing has been successfully kept open and operated through the entire winter of 1913-1914. This road has been built to all standard requirements of the A. S. E. and, if in the future its management can offer any encouragement, advice or friendly aid to those engaged in building the Government railroads it will be a pleasure to do so. In co-operation lies the future success of transportation facilities in Alaska. The wholesale construction of railroads cannot possibly be regarded in any other light than the greatest boon to the men who will pioneer that country and open up this world's treasure house to the miner, the lumberman, the agriculturist or others working in similar lines. There is no competition or rivalry between the existing transportation lines and any that might be built by the United States Government. Alaska today is at the dawn of a new era and every person interested in the advancement of that rich Territory is ready and willing to aid and cooperate with the Government in every way possible."

In a similar strain, J. C. Ford, vice-president and general manager of the Pacific Coast Company, said: "I believe it will require time for us to grasp the full significance of the benefits that will accrue to Alaska and the Puget Sound country as a result of the Government's decision to open up the district with a railroad.

"The first direct benefits will, of course, be the expenditure of forty million dollars by the Government, and the further amounts by individuals who have been given an incentive to seek beneficial investment by this reassuring move of Uncle Sam. Beyond these immediate results there are, as we all know, illimitable possibilities for the employment of labor and money in the development of Alaska's general and diversified resources with resultant increase

in wealth to Alaska and the Puget Sound country and, in fact, the whole United States, at least indirectly.

"Now that the first step has been taken, the progress will, without question, be rapid and continuous and the future, I believe, will give us a greater appreciation of the moment of this development than the present."

H. F. Alexander, president Pacific-Alaska Navigation Company, made the following significant remarks: "An opinion coming from one who for a good many years has been deeply interested in endeavoring to offer best possible transportation facilities to Alaska might be regarded by the public as being prejudiced. However, I take a very broad view of this matter and entirely eliminating the splendid results which must accrue to the commercial life and industry of Puget Sound generally, I might say of the Pacific Coast as a whole, the construction of railroads in the remote interior of Alaska will be the making of that rich country. The Government, as I take it, does not expect to reap a rich and immediate traffic harvest from such railroads, but it is acting as an aid to the general industrial and mineral development of the country, being willing to lend its influence and its unlimited credit to an enterprise which necessarily must for some years be non-productive. That the time will come when it will be productive there is no question and the Government is certainly in a position to take a philanthropic view of the situation.

"The construction work on the railroad should be a boon to the poor man who goes to Alaska as a prospector. If he does not make good the first season—in the past it has been necessary for him to come out and once out, after a discouraging season, it is seldom he returns. With the construction of the railroad and the opening of the coal mines, work will be available, so should he be unable to make good the first season he can secure employment until such time as he can again get a grub stake, and once more start out in the quest of the hidden wealth.

"Alaska has hardly been scratched. It is today the most heavily mineralized, unexplored area possessed by the United States, and the splendid results of its mines in the past will be many times eclipsed. During the last decade, capital has been timid about going into Alaska. Under the new conditions this feeling of timidity will be wiped away and we will find that ample capital will be forthcoming to properly develop the natural resources known to exist in the interior. The prospector will be benefited. For years his work has been greatly hampered by lack of transportation. Even if he located a particularly rich mine, it was practically useless without proper transportation facilities. The prospector will follow the railroad and on either side of the rails, these indefatigable pioneers of the West will spread out in all directions seeking to uncover new mineral ledges or placers and their consistent exploration of the country cannot help but bring future traffic to the road and help to build up hamlets and industrial plants along the route.

"The agriculturist will be benefited. Many areas are possible of cultivation, but there is no incentive to such cultivation without a market. The prospector, the miner, and the ever increasing population will provide the markets and the agriculturist can profitably develop the soil in some areas. The railroad work, opening of the mines, and the general policy of the Government to develop the country, are all bound to attract people, steadily increasing the population, through the list of opportunities which are known to exist in Alaska. It presents a splendid picture of future industrial and mineral development, and all interested should now work unitedly to co-operate with the Government in its splendid plan for the opening up and development of Alaska."

Thus, as is seen from the foregoing, the great event was duly recognized by leading business men of Seattle,

and especially by those directly interested in Alaska transportation enterprise. I regret that space is not available between these covers for a more extended presentation of these and similar expressions by leading people of the West, including bankers and those representing other important interests. Those given, however, express the general feeling everywhere manifest at the time. There was not to be found a spark of jealousy among those who already had entered upon railroad enterprises in Alaska. All alike expressed approval of the great program of the National Government in this behalf.

It is not thought expedient to present here an account of the widely extended series of celebrations held in Alaskan towns and cities, and in the centers of population on the Pacific Coast, generally, chief among which was the remarkably unique demonstration held in Seattle. All these were spontaneous manifestations of pent-up enthusiasm, and, in the nature of unbridled expressions, in a great variety of forms, of joy and gladness.

What may be regarded as a document of historic value consists in the joint telegram sent from Washington, D. C., to the Seattle-Alaska Bureau, from the chiefs of the campaign which ended in victory for the Alaska railway project. It follows:

WASHINGTON, D. C. March 21.—To the Alaska Bureau, care Arctic Club celebration, Seattle, Wash.: We send greetings and congratulations to those who tonight are celebrating in Seattle the epoch-making achievement accomplished under the splendid and patriotic leadership of President Wilson and Secretary Lane, aided by clear-visioned and statesmanlike men in both houses of Congress, supplemented by the efforts of the business men of Seattle and Alaska.

It has proved anew that united Seattle fighting for a just cause is irresistible. Other important measures pending before Congress must be enacted into law if Alaska is to have healthy and permanent development. We know that President Wilson is determined to duplicate the success of the Panama Canal construction in the building of a Government railroad in Alaska and that he will choose competent men to select the routes and locate the lines and to supervise the work.

Secretary Lane, who knows the work, will undoubtedly be in charge of the great undertaking and there probably will be a board of three eminent engineers to act under his direction. Col. Goethals and leading railroad builders have already been consulted as to methods to be employed in prosecuting the work.

Secretary Lane assured us today that steps are now being taken to carry out the purposes of the Alaska railroad act along practical lines at the earliest possible moment, and that he expects to visit Alaska this summer for the purpose of hastening the dawn of the day of Justice, when Alaska shall come into her own.

(Signed) J. L. M'PHERSON,
C. G. HEIFNER,
WILL H. PARRY,
T. P. M'DONALD,
FALCON JOSLIN,
D. A. M'KENZIE.

In addition to the foregoing the Alaska Bureau of Seattle received the following telegrams from Washington, D. C., on the night of Seattle's great celebration:

From Senator Miles Poindexter: "Please extend to the people of Seattle on the occasion of your Alaska celebration tonight my congratulations and best wishes. The passage of the Alaska bill has opened the door to an empire, but without the splendid work done by hustling business men of Seattle and the Northwest this door would probably be still closed. Great educational work done by the Alaska bureau you maintained here will bear fruit far beyond the mere building of a railroad."

From Representative W. E. Humphrey: "I regret that I cannot be present to celebrate the passage of the Alaska railroad legislation. A new day has dawned for Alaska. Her future holds great promise. Seattle has had a leading part in making possible this splendid consummation and she will justly share in the reward."

From Representative J. W. Bryan: "Alaska Railroad Bill had more fairness and justice and progressiveness about it than any legislation this Congress can enact. Before many years Alaska will comprise three proud states of the Union. The President considers the railroad a key, but no one has any conception of the resources to be unlocked or the marvelous destiny that awaits Alaska. I share with you tonight in your celebration."

This record would not be complete without mention of the valuable services rendered the cause of Alaska, by the Seattle press, notably by the Post-Intelligencer, Scott C. Bone, chief editor, and his able staff; the Seattle Daily Times, Colonel Alden J. Blethen, editor-in-chief, and his efficient staff; by the Star and the Sun, and by the Seattle Chamber of Commerce, the Seattle Commercial Club, the

Seattle Arctic Club, and other commercial and social organizations of the city.

A condensed history of the Alaska Railway Bill will be of interest. The special session of the Sixty-third Congress met on April 7, 1913. The Delegate from Alaska, Hon. James Wickersham, had prepared a railway bill. On that date he gave a copy of this bill to Senator Chamberlain, of Oregon, and requested him to introduce it in the Senate, while the Delegate himself introduced it in the House. The Senate bill was No. 48; the House bill was No. 1739. On the same day a different bill was introduced in the Senate by Senator Jones of Washington. The Senate bills were referred to the Committee on Territories, of which Senator Pittman was chairman, while the House bill was referred to the House Committee on Territories, of which Judge Houston, of Tennessee, was chairman.

Hearings in support and opposition were held first before the Senate Committee on Territories. A large number of persons interested were present and the Delegate from Alaska was requested by the Senate Committee to take charge of the hearings in behalf of the Railway Bill. Very lengthy hearings were had before the Senate committee and were printed in a large volume for general distribution. The Senate bill was reported favorably on June 17th to the Senate, where Senators Chamberlain, Jones, Pittman, and Walsh took charge of it and pressed it for passage.

The House Committee on Territories took up the hearings after the Senate committee had finished and conducted extensive hearings upon the bill. It was reported favorably by the House Committee on Territories November 26, 1913.

The Senate changed the original bill introduced by Senator Chamberlain in many respects though retaining substantially the main features of the bill as originally prepared. The House Committee on Territories reported

the bill very largely in the exact words of the bill as introduced, though omitting therefrom a number of features which were thought to be unnecessary. After long argument in the Senate the bill was passed on Saturday, January 24, 1914, by a vote of 46 to 16.

The bill having passed the Senate first, it was transmitted to the House for action, and referred to the House Committee on Territories. This committee met and after much consideration, by unanimous vote struck out of the Senate bill all except its number and title, and inserted the House bill as amended by the House Committee on Territories. With these corrections the Senate bill was reported to the House, where it passed on February 18th by a vote of 230 for and 87 against.

As finally passed by the House, though under the Senate title and number, the bill was the House bill without change. The bill was thereupon returned to the Senate and a conference committee was appointed both by the Senate and the House to agree upon the differences between the bill as passed by the Senate and the House. The conference committee agreed to the bill as passed by the House and thereupon March 6th and March 10th the House and Senate adopted the report of agreement of the conference committee and the bill was transmitted to and was signed by the President on March 12th, and became a law.

As finally passed and approved by the President the bill contained generally the provisions of the House bill, although amended in many respects by leaving out parts which were thought by the committee to be unnecessary.

There were two ideas prevalent in preparing and passing this bill through Congress. The bill drawn by the Delegate from Alaska provided for placing all power in the hands of the President and making him responsible for the location of routes and the expenditure of the appropriation in the construction of the road. There were those who wished to have the work done by a commission to be ap-

pointed by the President. The bill introduced by Senator Jones represented the commission idea and proposed to relieve the President from the responsibility and to impose the whole burden upon a commission to be appointed by the President. Much opposition was made to this idea and Congress finally agreed to impose the entire burden upon the President.

Of course, there was much opposition to the bill from two sources: First, from those interests which wished to control transportation in the Territory of Alaska and did not wish the Government to enter the field of transportation in that Territory; secondly, from those who were conscientiously opposed to the Government constructing a railroad and operating it in opposition to private enterprise.

It was presented to those who held this view that the situation in Alaska was such that while the bill might seem open to their objection really it amounted to no more than Government aid which had so freely been given to railroads in the Southern and Western States.

The opposition to the bill in the House was lead by Messrs. Ferris and Davenport, of Oklahoma, who were earnestly supported by many representatives from the South and especially along the lower Mississippi River. President Wilson did not commit himself in favor of the bill until the convening of Congress on December 2, 1913. In his message delivered on that day he strongly advocated the building of the Government railroad in Alaska. From that time forward his Administration supported the Alaska Railway Bill and gave every assistance in procuring its final passage. Before the President made any public announcement upon the subject, both the Senate and the House had favorably reported the bill—in the Senate on June 17th, and in the House on November 26th, prior to the President's Message.

CHAPTER XXII.

NATIONAL GOVERNMENT'S PROGRAM.

VIGOROUS REPORT OF SECRETARY LANE—THE COMMISSION FORM OF GOVERNMENT FOR ALASKA RECOMMENDED—AN IMPORTANT DOCUMENT FILLED WITH VALUABLE INFORMATION — HOW ALASKA IS GOVERNED — HOW IT SHOULD BE REGULATED—CONCENTRATION OF POWER AND AUTHORITY RECOMMENDED.

WE have seen from the preceding chapters something of the size of the effort which was found necessary to overcome the opposition of the Eastern States to the initial measure of the National Government for a new beginning of the development of Alaska. Attention now is directed to the necessity of continuing a similar program of education and agitation, if the general program of the Government, which must follow this initial step, is to be carried out to the advantage of the whole country.

As already noted, the opposition of the East, and some portions of the Middle West, to the vigorous utilization of Alaskan resources, rises from three causes. First, there still is the honest ignorance of the people as to the value of Alaska for general settlement purposes. Secondly, there is the prejudice of the great business interests which scent danger to their commercial and industrial combines in a radical development of the natural resources and ever widening transportation interests of Alaska. Thirdly, there are the demands of politics.

In order to overcome these adverse forces, the friends of Alaska will need to continue, indefinitely, their campaign of educational and diplomatic efforts throughout the whole country. This becomes the more imperative as one realizes the extent of the Government's program on behalf of Alaska.

In this connection, it may be noted that the Alaskans yet remaining at the National Capital, to watch and promote Alaskan legislation, now on the calendar, needful to unlock the Northland and to permit of the utilization of its resources, are prone to fret under the excessive attention paid to Mexico. One of these gentlemen recently expressed the view that the Washington administration is profoundly interested in the correction of economic conditions in Mexico, in an improvement of the land system of that foreign country, while, for the past seven years all of the lands in Alaska have been tied up; the development of that vast country strangled; private ownership of land practically prohibited, and, all because, through conflicting opinions in Congress, that body has been utterly unable to create and to put into effect any adequate land system for Alaska.

It properly is held that "as a question of comparative values, the unlocking of Alaska to development, with the certainty that it would be a great and prosperous state, capable of supporting a population which would consume more products of other parts of the country than Mexico will in the next generation, is of much greater economic importance than any internal policies which may be forced upon Mexico."

These observations lead us to ask for information as to the nature and extent of the National Government's program for the development of Alaska, and its plan of governmental regulation of that important work. First, there is the constructive policy of Secretary Lane for a commission form of government for the Territory. For information as to the provisions of this plan, we naturally

consult the Secretary's report on the same to Senator Key Pitman and Congressman William C. Houston, chairmen of the Senate and House committees on territories, respectively. In this somewhat exhaustive document, Mr. Lane urges the creation of a development board, to have complete control of the national resources of Alaska, in which he makes a severe arraignment of the present red tape methods in the management of public affairs in that Territory.

A reliable news report from Washington, D. C., says: "Bills for the creation of boards or commissions to administer the government of Alaska have been introduced in the Senate by Senator Chamberlain of Oregon and in the House by Delegate Wickersham of Alaska. These bills differ only in detail, and the general purpose and scope of both is in accord with the recommendations of Secretary Lane.

"The development board plan urged by the secretary provides for a board of three members, appointed by the President and confirmed by the Senate, which is to have headquarters in Alaska and is to be charged with the general conduct of all governmental affairs there connected with the natural resources and development of the country."

Secretary Lane outlines his interesting plan in the following able argument which I quote from the report in question: "While this patchwork system of administrative machinery has answered well enough while the government's policy has been merely to keep the door shut and discourage development, it will not answer under the new policy.

"If the work needed in the future were to be purely and solely administrative, it must still be efficient and under responsible and readily responsive supervision. Alaska's remoteness alone makes anything like supervision by bureaus located in Washington more or less perfunctory and superficial.

"What we now have in Alaska is little more than a number of independent and unrelated agents, acting largely upon their own initiative, each attending only to some special branch of police work, and no branch adequately organized to cope with its own problems, without even attempting to coordinate its work with that of the other branches.

"But the task of administering the laws relating to the disposal and development of the public domain and resources in Alaska is also a task of construction. The problem is the settlement and development of the country and of all its resources to the best advantage. Each branch of work, now under a different supervision, is a part of one and the same problem. It is a huge task that is ahead, but it is a single task, and to undertake it successfully it must be put into the hands of a single authoritative directorate.

"I have pointed out, in some detail, the shortcomings of the present system—its delays, red tape, circumlocution, divisions and overlapping of authority and ineffectiveness, as well as the discouragement it offers to settlers, whom we want to encourage.

"To secure effectiveness we must eliminate these delays, the red tape and the confusing and confused machinery now in use, and substitute for it machinery that will be direct, prompt and certain in its operation.

"The members of the proposed development board would be appointed by the President and confirmed by the Senate. Their salaries would be sufficient to enable men of ability to devote themselves exclusively to the work of the board. This board would have its headquarters in Alaska, and its members would live in the Territory. It would have authority to appoint its own agents and supervise their work.

"The board would make its reports and be directly responsible for its actions to a single cabinet officer, the

Secretary of the Interior, whose department is most closely identified with Alaskan affairs, and probably best equipped by experience and organization to handle such matters.

"It is proposed and urged that the board should take over such authority now exercised by various departments and bureaus as may be necessary to give it supervision over practically the entire public domain and all the natural resources of Alaska, and control of such activities as are closely related and essential to the development of the physical resources of the country.

"The board would do the work now done in Alaska by the general land office, the forest service, the road commission, the bureau of mines, the bureau of education and the Secretary of the Interior. It should take over a part of the work and authority of the bureau of fisheries. There are good reasons why the control of the seal industry, the salmon hatcheries and the sea fisheries should be left in the hands of the Department of Commerce.

"Beginning at the shore line, however, the development board should have complete control of all government activities and interests connected with the development of industries and transportation, and the settling of the country.

"This should include the control of water powers, building and maintenance of roads and trails and the operation and rates of the railroads and telegraph lines.

"It should include protection and control of game, fur-bearing animals, public lands, mineral deposits, coal, oil, gas, hot springs, timber lands and timber. The board should also take over the work of education among the natives and the supervision of the reindeer industry.

"It should control the work of the surveyor general's office. It should have authority to either succeed the Department of Agriculture in supervision of the agricultural stations in the Territory, or to supplement these with demonstration farms for the benefit of homesteaders.

"All of these activities are closely related; all form a part of the one big Alaskan problem. Their direction should all be in the same hands.

"The present national forests do not include all the Alaskan forests, and yet a very large part of the present forest reserves are untimbered lands. If it is desirable to protect a part of the timber lands in the Territory there seems no reason why they should not all be equally protected.

"Large quantities of timber will be needed in the full development of mining and other industries in Alaska and the settlement of the country. The timber supply is none too great to meet those future demands. In the face of these facts, the forest service is planning to sell large amounts of timber for export. If the general laws prohibiting exportation of Alaska timber are wise laws they should apply to all the timber in the Territory. There seems to be no reason for making fish of one tree and flesh of another.

"Sales of timber from the national forests in Alaska have not been sufficient to pay the expenses of the forest service in the Territory. It would seem that the time has come when the protection and preservation of the forests in the Territory might safely be left to the same administration that is trusted with control of other parts of the public domain. The forest service might very well be left in an advisory capacity to the development board in matters relating to forestry.

"It is probable that such a board as proposed would discover most of the present separate and overlapping inspection and police forces in the Territory to be unnecessary, and would secure greater efficiency by having some of these special policemen do general patrol duty.

"The duties of forest rangers, game wardens, protectors of fur-bearing animals, reindeer guards, bird wardens, etc., would not seem to be of a nature requiring such a high degree of expert and specialized knowledge

and ability that they might not all be performed by the same men, and much of the present duplication and multiplication of cost and effort be eliminated, with increased effectiveness.

"Under the proposed consolidated administration of land and resources, a single set of experts and agents would be more efficient than the present duplication of field forces. Instead of lengthy and involved correspondence between agents in the field and several bureaus in Washington to determine questions of law and of fact, the questions of fact would be decided on the ground, in Alaska, under the administration of the development board, and all the papers in any land claim would be thoroughly prepared before the case comes to Washington.

"This would simplify procedure, help to reduce the congestion in the general land office, give fuller and more exact information upon which to base decisions, and obviate and eliminate the long delays caused by the present methods.

"Under the law, natives and other original settlers in Alaska are guaranteed undisturbed occupancy of their lands. No provision is made, however, for granting titles to those lands, and nothing has been done toward a solution of this problem, which is constantly becoming more vexatious.

"This is one of the problems which must be worked out on the ground by men familiar with conditions, and whose recommendations will carry with them assurance of complete information and disinterestedness.

"Transportation and communication are the nerves and arteries of civilization and commerce. Railroads and wagon roads are equally essential to good mail service. Settlement follows close upon the heels of the road builders everywhere.

"The construction of roads and trails is very closely allied with other problems involved in the opening and development of Alaska and its resources, and it would seem

HON. FRANKLIN K. LANE—SECRETARY OF THE INTERIOR

the part of wisdom to place this authority and supervision in the hands of men charged with the broad work of encouraging development.

"The army has done the pioneer work in this line, and done it well, but since the general development of the country must be considered from a much broader point of view than that of military necessity or strategy, it seems reasonable that the handling and disposition of the public lands and natural resources and the opening and maintenance of the roads essential to the opening of lands and development of natural resources should all be in the same hands.

"For many years road building must be carried on by the government, as the mileage to be built and cared for will be too heavy a burden upon new settlers and young and experimental industries.

"The division of road funds and construction work before referred to seems wholly useless and without justification. If roads are needed in the sections of country now within the forest reserves, they should be built without regard to the percentage of timber sales; if they are more needed elsewhere in the Territory, it seems the height of absurdity to spend the money arbitrarily for constructing little patches of trails and board walks here and there in these reservations, just because they are forest reserves.

"It is perhaps too much to predict that Alaska ever will become a rich farming country, in which its agricultural products will predominate. There is little doubt, however, judging from results already attained, but that the territory is capable of increasing agricultural possibilities which will be sufficiently profitable to enable the supplying of home markets with home-grown agricultural products to a very large extent.

"The reports of the agricultural experiment stations in Alaska show crop productions in potatoes and some grains that compare favorably in yield with highly-favored

sections of the United States, while the market value of the crops locally is of course much larger.

"In view of the fact that the agricultural experiment stations carry on experiments wholly without regard to cost or financial results, as a rule, it will probably be found that an extension of practical demonstration work on the farms will be of large value in the encouragement of homesteading and farming in the Territory.

"As growth and settlement increase, the need of more demonstration agents in the field will naturally increase. While the men who do this work should probably continue to be ultimately responsible to the Department of Agriculture, there should be close coordination and cooperation with a local administrative board familiar with the direction and prospect of settlement and development along other lines.

"Practically all the lands and natural resources of Alaska," says the Secretary, "are still the property of the United States. Until now we have only protected these riches against monopoly and waste, and the most cumbersome departmental machinery has sufficed. Heretofore we have done little more in Alaska than keep a few policemen stationed at closed doors to prevent breaking and entering. Now that we are to open the doors, we need more than a police force.

"Mineral and other resources must be opened to use; the lands must be opened to settlement. There must be such administration of the laws as will give prompt and ready assistance, unhampered by red tape and unnecessary delays, to honest settlers, while protecting fully the rights of the nation against monopoly, fraud and waste.

"We are to encourage the building of industries and commerce, and the making of homes and farms, in the new Territory. To do this we must plan and build systems of roads and farms. We must plan the location of towns and provide facilities for settlement. Fuel and power must be made available for domestic and industrial uses.

Revenues must be provided without discouragement to settlement and industry, and there should be no bar to efforts for simplifying and bettering taxation methods.

"There must be new and simple machinery for the successful working out of this program. The new policy is not to invite a few men to exploit the cream of Alaska's riches, but to develop all the resources and possibilities of the Territory harmoniously, for the best interests both of the people who go to Alaska and the people of the United States, who own this great public domain.

"Alaska's problems are largely peculiar to Alaska. Our present system of government there is heterologous. Instead of one government in Alaska we have a number, interlocked, overlapped, cumbersome and confusing.

"There is a government of the forests, a government of the fisheries, one of the reindeer and natives, another of the cables and telegraphs. There is a government for certain public lands and forests. Each of these governments is intent upon its own particular business, jealous of its own success and prerogative, and all are more or less unrelated and independent in their operation.

"Experience has demonstrated that efficient administration is best secured by centralizing responsibility and authority in the hands of a few men, who can be held to strict accountability for the results of their actions. The proposed development board for Alaska follows this modern and well-tested plan for securing efficient administration."

Speaking of the defects of the existing, but now obsolete system, Secretary Lane says:

"There is one procedure for making homestead, mineral and other land entries within the National Forests; another procedure for making such entries in lands outside the forest reserves. Water power and power sites within the forest reserves are leased and operated under permits from the Forest service; there is question as to whether author-

ity exists for disposal or leasing of water powers elsewhere in Alaska.

"A citizen who wanted to lease an island for fox farming carried on a correspondence with three different departments for several months in an effort to learn which had jurisdiction and authority to make the lease. It was finally decided that none of them possessed this authority. Certain islands along the south coast of Alaska may be leased by the Department of Commerce; adjoining unreserved islands may not be leased, but may be acquired under the general land laws from the Department of the Interior. Still other islands are reserved for special purposes, under the control of the Department of Agriculture.

"Vast areas in the forest reserves are entirely untimbered, but are held under the regulation of the Forest Service, while timbered lands in other sections are unprotected.

"Mineral claims within the forest reserves must be investigated and approved by the Forest Service before the general land office may grant patents. Homesteads within the forest reserves are surveyed by the Forest Service without cost to the entryman. Homesteaders on unsurveyed land outside the forest reserves must pay for their own surveys.

"Timber in the National Forests is sold at auction, under rules and regulations of the Department of Agriculture. Timber on other public lands is sold under different rules and regulations, made by the Interior Department.

"Roads and trails within the forest reserves are built by the forest service. Roads and trails outside these reserves are built by a commission of army officers.

"The general laws forbid the exportation of timber cut off public lands in Alaska, but permit exportation of pulp made from such timber. There is no prohibition against exportation of timber cut in the forest reserves.

"Many islands frequented by birds are set aside as game reserves, and are under the protection of the Biological

Survey, which sends a keeper in the summer to guard some of the islands. Game animals throughout Alaska are protected by wardens hired by and under the direction of the Governor of Alaska, who enforce regulations made by the Department of Agriculture, and are paid from an appropriation made to and disbursed by the Department of the Interior. Fur-bearing animals are under the protection of wardens appointed by the Secretary of Commerce and work under regulations made by the Department of Commerce. Game animals are deer, moose, caribou, mountain sheep, mountain goats, brown bears, sea lions and walruses. Fur-bearing animals comprise rabbits, squirrels, wolves, lynx, mink, otter, beaver, foxes and black bears.

"The Bureau of Fisheries employs one warden and five deputy wardens for the protection of fur-bearing animals in the Territory. Game wardens are appointed by the Governor, and rangers and other officers of the forest service are authorized by the Governor to also act as game wardens. The Governor's game wardens have also been appointed by the Bureau of Fisheries to protect fur-bearing animals, but at present only one person is serving in this dual capacity. Forest rangers, however, are not charged with protection of fur-bearing animals, and the wardens and deputies of the Bureau of Fisheries have no authority over the protection of game."

Mr. Lane points out that there are now only 862 miles of wagon roads, 617 miles of sled roads and 2,166 miles of trails in Alaska, for the construction and maintenance of which about $2,600,000 has been expended. He declares that the roads and trails are as essential to the opening of Alaska to settlement as railroads, and that these roads for several years to come must be built by the Government.

The Secretary goes into some details concerning the needs of the Seattle-Alaska cable system, as follows: "The cable between the United States and Alaska and the telegraph lines in Alaska constructed and owned by the Gov-

ernment, are operated by the signal corps of the War Department.

"It was proposed some time ago that these lines should be taken over and operated by the Postoffice Department, and there has been some conferences between the War and Postoffice Departments concerning this project, which, however, have not reached a conclusion, although in view of these negotiations, I understand, no estimate for maintenance and operation of the system for 1915 has been made by the War Department.

"Since the operation of this telegraph and cable system is largely for commercial purposes, its continued operation as a part of the military establishment is objected to in some quarters as inconsistent. Whether this service should be continued by the War Department, transferred to the Postoffice, or operated under the local management of the proposed development board, is a matter that may be worthy of some consideration, and should be determined wholly by the question of which administration will be most efficient, economical and convenient.

"This cable and telegraph system includes 2,621 miles of submarine cable, 1,064 miles of land lines, with forty offices, and ten wireless stations. The wireless stations of the military system are located at Wrangell, Petersburg, Eagle, Circle, Fairbanks, Tanana, Nulato, St. Michael, Kotlik and Nome.

"Wireless stations at Valdez, Sitka, Cordova, Kodiak Island, Udatka, Dutch Harbor and Pribilof Island are operated by the Navy Department, which has expended $347,364 in the equipment of wireless telegraphic outfits in Alaska, according to Navy Department figures.

"Those familiar with this service say that, under whatever administrative head these lines may be placed, a new cable will have to be laid between Seattle and Sitka within the next few years. The laying of the present cable cost something like $1,000,000, and its replacement, if found necessary, would probably cost no less.

"While it is said that under present conditions wireless cannot be substituted for cable service between this country and Alaska, it is not impossible that a way may be found of making this substitution and obviating the heavy expense incurred in the rapid wear upon submarine cables caused by the great depths, rocky and precipitous sea bottom, electrolytic influences and seismic dangers to which they are now exposed in these waters."

The financial statement contained in Mr. Lane's report is interesting. He says: "The expenditures include $314,051.49 for the Treasury Department, $54,224.37 of the Navy Department, $2,247,494.13 by the War Department, $552,898.82 by the Postoffice Department and $732,643.28 spent by the Department of Justice.

"Although a statement of the receipts and expenditures," says the Secretary, "shows a large discrepancy on the debit side of the ledger, this is by no means discouraging. There are many items of governmental expenditure in the Territory that are not fairly chargeable to Alaska. Probably one-half or more of the present and past expenditures come under this head. The deficiency remaining is one that may easily be overcome.

"Alaska can be made self-supporting within a very few years, as soon as conditions are created that will enable settlement and development and produce revenues. So far the Government has done little, aside from the care of the seal herd, to bring returns. It is unreasonable to expect revenue from an undeveloped and unsettled country."

The foregoing condensation of Secretary Lane's able statement on conditions and requirements in Alaska is likely to constitute the beginning of a new order in the government of that Territory. Concerning his utterances, the Seattle Post-Intelligencer of June 2, 1914, said:

"There is sound sense, practicability and constructive statesmanship in the suggestion made by Secretary Lane for the creation of a commission, to take charge of all the resources of Alaska, to do that work well in that Territory which is now done badly or not at all by half a dozen or more different governmental agencies, all limited in what work they can do by the constant necessity of referring everything to bureau officials in Washington City.

"In the form of a report made to the Senate and the House Committees on Territories, Secretary Lane marshals the arguments in favor of his scheme. The mere recital in this report of the manner in which matters affecting Alaska are now parceled around among the different bureaus and departments, is a sufficient argument in itself for the adoption of some simple, comprehensive and workable plan, and he has outlined such a plan.

"There should scarcely be any question that all matters affecting the public domain should be administered, not alone in Alaska but everywhere else, by one bureau of one department of the general government. The forestry service belongs to and should be entirely under the jurisdiction of the Interior Department, for one thing.

"But as far as Alaska is concerned, all the matters affecting it and the development of its resources should be left under the control of a single commission of competent men, on the ground, with full power to act, unhampered by the bureaucratic methods of Washington City, but free to deal with every situation as they find it. This is the diametric opposite of the bureaucratic methods under which Alaska has been bottled up for so many years and that very reason affords a strong argument for it. Secretary Lane's report on the subject should be conclusive and Congress should act upon his recommendations, which have already been embodied in bills now before Congress."

The press of the East, however, did not receive Mr. Lane's statement with general approval. The idea immediately was advanced that his proposals contemplated placing

too much power in the hands of only three men. Thus, it is seen that Eastern sentiment still is prone to find a pretext for throwing obstructions in the way of Alaskan development. This shows that the friends of Alaska must continue their campaign of education in that important part of the Nation.

CHAPTER XXIII.

GOVERNMENT'S PROGRAM—COAL LANDS.

More Liberal Policy Regarding Coal Claims—End of the Controversy Which Locked up Alaska Resources—Nature of the Forestry Troubles—Forestry Domination on the Decline and Industrial Progress Reviving—A Similar Plan for Idle Water Powers.

IT has been made plain by the preceding chapters what the program of the National Government for Alaska is regarding railroads, or the internal transportation of the Territory; also, as to the administration of law, and the regulation of industry, generally. In connection with the latter, many subjects have been covered. We now come to consider the all-important question of the development of the coal fields of Alaska, and the plans of the Federal Administration in that behalf. While this important phase of our great subject has nowhere been reduced to print, except as the coal land leasing bills now before both houses of Congress give expression to it, there is, nevertheless, a somewhat clear indication of the policy of the Administration on this head disclosed in the regular routine of official business at the National Capital.

I have avoided, in a great measure, giving an account of what is known as the coal claims controversy of Alaska, and of how the coal lands were tied up from development through what many hold to be an over-zealous administration of the conservation policies of former national cabinets. This course has been adopted because the whole matter has become a factor in party politics, in such a

complicated way that one finds it difficult to state the case fully, without giving offense to certain political factions. This it is the purpose of this effort to avoid.

It was to have been expected that as soon as prospecting and development disclosed the existence of vast, valuable coal deposits in Alaska, those seeking wealth by means of the coal industry, possessed of the means enabling them to do so, would put forth strenuous efforts to possess themselves of as extensive coal areas in Alaska as possible. In this struggle of rivalry, no doubt more than one individual or concern resorted to extremes which transgressed strict interpretations of the mining laws. There always is a more or less broad margin for subterfuge in location enterprises touching all classes of mining claims, and, in some respects, coal land locating is particularly tempting to excesses along these lines.

On the other hand, subordinate officials, often too officious, or over-zealous to serve the administration upon which they depend for employment, frequently apply their authority with too great rigor, and sometimes in a spirit of partiality. Between these two extremes the coal claims controversy of Alaska rose, from time to time, during the past seven years, and, as is well known, resulted in locking up the greater part of the resources of the Territory from development.

This was the situation which the Wilson Administration faced upon assuming office in 1913. At that time Alaska was in a state of stagnation. Development enterprises in that great section of the country were at a standstill. Capital and energy had become discouraged and the population had begun to decrease. In short, 1913 found Alaska on the decline.

On taking office the Wilson Administration at once entered upon a plan to relieve the situation in Alaska. This movement was quite fully foreshadowed in the President's message to Congress in December, 1913, and the pre-

ceding chapters rather fully indicate what has been accomplished since that date.

The large number of Alaska contested coal claims cases, which had accumulated prior to the date last named, became a seriously vexatious inheritance of the new Administration. A number of prosecutions had been begun in the Federal Courts against those charged with violating the laws in their attempts to secure Alaska coal lands, and, early in 1914, some of these went against the Government in such a way as to indicate that most of the others pending would, if pressed, suffer the same termination. The dismissal of these suits, by order of the Attorney General, followed, and the way was thereby opened for a peaceful solution of the whole controversy.

Before the middle of June, 1914, it was announced that about all the contested coal claims in Alaska, and many in the State of Washington, would be ordered to patent. This was a smashing of the chains that bound Alaska of nearly as great potentiality as the enactment of the Alaska Railway law. It was even stated that the Alaska coal claimants, who in their long struggle for justice were compelled to allow their claims to lapse, would have their rights restored.

All this was made reasonably certain in a decision rendered by Assistant Secretary of the Interior Jones in June, 1914, in which a decision of the Commissioner of the General Land Office, reached when the controversy was at its height, was absolutely reversed, and a patent was ordered to be issued to Charles C. Lightfoot on a claim in the Glacier coal fields in the State of Washington. The news report on this head states that the decision was regarded as the broadest made in many years, and that as other decisions must be predicated upon it, it not only will affect the Alaska coal claims but many in this State.

The sweeping character of the decision in the Lightfoot case is seen in what may be regarded as a somewhat new and important interpretation of the law concerning

what constitutes a patentable coal claim. In the case under consideration, the Assistant Secretary of the Interior, from whose decision there is no appeal, says J. J. Underwood in the Seattle Times, "Upsets the ruling made by Secretary of the Interior Walter L. Fisher in the famous Cunningham fight, to the effect that a claimant must open and develop a payable mine, but it holds that a patent shall be issued in a case where only $1,500 worth of work has been done, and on ground upon which the geological formations are sufficient to warrant a man of ordinary prudence in the further prosecution of exploration work and development, with reasonable prospect of success in developing thereon a workable and paying coal mine."

The decision here referred to is important in that all other decisions must be founded upon it. It has not generally been supposed that Secretary of the Interior Lane would venture to reverse the Fisher decision, "For fear," says Falcon Joslin, president of the Tanana Mines Railway, "of a political attack from the conservationists. Two years ago such a decision would have meant his political death and his relegation to everlasting obscurity in the affairs of the Nation." It is seen, however, that the campaign of education begun four years ago, to which extensive reference has been made, and in which the Seattle press rendered valuable service, has resulted in a better understanding of the true situation regarding the principles involved in these matters, especially in the minds of the people of the East.

It is true that this Lightfoot decision deals a death blow to the dominating rule of the forest service. "It recites," writes Mr. Underwood, concerning this case, "that certificate of entry was withheld because of an adverse report filed by a forest officer. The register and receiver, however, held that the money had been expended on the ground in good faith for the purpose of developing a coal mine. This decision was reversed by the Commissioner of

the General Land Office on the ground, substantially 'that the land has little value because of its timber; that no workable coal outcrops had been discovered thereupon, no coal being found, except a streak of mixed coal and shale in a shattered formation in two openings made by the claimant.' The Alaska coal claimants proved, not only by their own workings, but by the reports of the United States Geological Survey, that they had an abundance of coal available. Many of them were disqualified on the technical ground—a new ruling created for the occasion—that they had not proved that the coal could be marketed at a profit."

Thus, it is seen that in the effects of recent decisions of the Federal Courts, and those of the more liberal policy of Secretary of the Interior Lane than appears to have characterized the program of his predecessor, the coal claims controversy of Alaska is fast fading out of existence, and the obstructions to the development of that Territory are as rapidly disappearing. One of the most hopeful indications of the dissolution of the "Alaska tie-up" is found in the natural process by which the ruthless embargo is being dissolved. The mountain is falling or sinking from attention by its own abnormal weight, plainly demonstrating that the whole matter rose from political conditions, and never did exceed the status of psychological creation.

The unmistakable indication of an open door to the development of the great Alaskan coal fields, which already is beginning to characterize the active policy of the Wilson Administration, is inspiring new life and energy in private enterprises begun one, two and three years ago, on behalf of coal and other developments in that Territory, and is creating new plans and giving rise to many new undertakings on the same lines. This new activity already is extending to various sections of the

Pacific Northwest, especially the State of Washington. Among numerous new enterprises born of this more liberal policy towards Alaska which are taking form in this state, on lines of the coal industry may be noted the recent conclusion of arrangements for the expenditure of several millions of dollars for the further development of the Glacier anthracite coal fields, situated twenty-five miles from Bellingham.

This enterprise includes six coal claims in the district named, and is mentioned in this place for the reason that these claims until recently constituted items in the contested claims controversy, covering about 1,000 acres. This property recently was the cause of a bitter fight between those who sought to obtain it and the national forestry service, before the Land Department of the government. In this case the forestry agents were defeated and the claims were ordered to patent.

Thus, again it is seen that in the measure in which undue forestry domination is overcome, industrial wealth producing progress is stimulated. It is not that enterprise should be encouraged at the cost of destroying the forests of the country, because, in this case, as in most others, where forestry officials have interfered to prevent mining operations, little or no timber was involved.

This more reasonable policy of the National Government, in distinguishing between the relative values of timber and coal, soon will greatly increase productive industry in Alaska and the Pacific Northwest generally.

It is well understood that the same liberal policy is to be carried out regarding the many at present valuable but idle water power locations in Alaska and the Pacific Northwest. This announcement will be received with rejoicing by many who have been defeated, in the past few years, in their laudable plans for the material development of the country.

CHAPTER XXIV.

SEATTLE-ALASKA PROGRAM.

SEATTLE'S GAINS—IMPORTANCE OF VISITS OF SECRETARY LANE AND SECRETARY REDFIELD TO SEATTLE—ACTIVITY OF THE RAILWAY ENGINEERING BOARD — PROSPECTIVE NITRATE PLANTS—WHAT THE NEW ERA WILL PRODUCE—PHENOMENAL GROWTH OF SEATTLE—PROGRAM FOR GENERAL DEVELOPMENTS—THE SEATTLE AND ALASKA OF THE NEAR FUTURE.

IT may be said that from the beginning of 1914, the National Government's Program for the development of Alaskan resources, industries and transportation facilities assumed a decidedly Seattle-Alaskan viewpoint. At the beginning of the new movement, Franklin K. Lane, Secretary of the Interior, visited the Coast and gave his assistance to the work already in progress of securing the Alaska government railroad. The announcement made by the Secretary of his plans concerning Seattle and Alaska included several things which had been indicated before his visit to the Coast. At that time, however, these were in an embryonic state and it was not until he had thoroughly considered the situation that he resolved not only to carry out all of them but to extend his program to include matters even more important.

It was later announced that the advantages of the new program of prosperity which would bear directly upon Seattle progress, to stimulate it, would be as follows:

Seattle will be separated from San Francisco in the marine inspection service and made the center of a new

VIEW OF WRANGELL, ALASKA

Photo copyright by W. H. Case. Courtesy W. P. & Y. R.

VIEW OF KETCHIKAN, ALASKA

Photo by Curtis & Miller.

jurisdiction, with this city as headquarters of the supervising inspector and his corps of assistants, and Alaska will be included in the new district.

An administrative headquarters of the Bureau of Fisheries in Seattle with a deputy commissioner in charge for Puget Sound, and probably for Alaska. The headquarters of the superintendent of salmon fisheries on the Pacific Coast will be removed from Oregon City to Seattle. Supplies for the government hatcheries and fishing stations will be purchased in Seattle instead of San Francisco. Extensive fish propagation will be carried on in the State of Washington.

The headquarters for the fur seal industry in Alaska will be removed from San Francisco to Seattle. Seal skins already are being shipped to Seattle and supplies for the government stations are to be purchased in this city.

The Bureau of Domestic and Foreign Commerce, which closely cooperates with customs officials and exploits trade markets and the products of different sections, also will be established in Seattle.

The department greatly will increase the efficiency of the coast and geodetic survey work. Alaskan waters will be wire-dragged and three new survey vessels will be asked from Congress to complete a definite and exhaustive survey. Alaska will have the largest lighthouse tender in the service of the government to cost $325,000. Approximately $60,000 will be expended in placing buoys and other aids to navigation.

Necessity for a new building to house the many branches of the Department of Commerce promised Seattle was indicated by the Secretary as not far distant.

The foregoing plan was not all made public until the visit to Seattle of Secretary of Commerce William C. Redfield, which occurred early in 1914. He followed Secretary Lane to the Coast as part of the plan by which the departments of the Federal Government, charged with the

task of improving the public service in the Far Northwest, should become fully acquainted with the needs of this section of the country. In many respects the visit of Mr. Redfield to Seattle was of great importance to the National Government and to the Pacific Coast. He delivered several addresses in the city, in one of which he said:

"America is entering upon a new era which will have for its standard not the dollar-mark, but the man. The condition of the workers will be improved, boys and girls will be taught to become self-supporting and the nation will stride ahead along industrial and commercial lines in a manner which will astound the world.

"We are now in the midst of the third great period of development in this country. We have learned some dreadful lessons. We have come to a finer realization of greater values than those of cash. Now the eyes of the country have been opened for the first time to a sense of the value of men.

"We are beginning to realize that we must not only teach our children the knowledge of the head, but of the hand. We are learning that the thing most valuable is ourselves. The nation does not exist for a part of us, but for all of us. The man in the forest, the mine, the factory, is becoming just as valuable to the country as the man who employs them. They may no longer run their industries so that they will prosper at the expense of men."

In another address he said: "Taking the lid off Alaska, and it seemed high time to take it off, through the means of a government constructed railroad in Alaska, is an event of great national importance. Alaska will be opened for good. It will no longer lie in comparative isolation from the rest of the nation.

"We see visions of a great outpouring of agricultural, mineral and marine products from this treasure land, and the people of the Northwest, with their accustomed energy, undoubtedly will do their part in the development of Alaska. * * *

"Suppose for a moment that the railroad lines of communication to the East and South should not operate to this city for a month. Imagine the isolation of the Northwest, and then compare this isolation and your prosperity with Alaska's isolation and coming future!

"It has been unfortunate that it has been difficult sometimes for those at Washington to look beyond the Rockies. We of the East need you of the West, and you need us. I believe that the Democratic party has done much to break down this barrier between you and us, as evidenced in the passage of this important railroad measure, and the fact that seven cabinet members have visited the Northwest, and, including Secretary Bryan, eight have visited the Coast.

"If I am correctly informed, the Assistant Secretary of the Navy will be here next month; Secretary Lane expects to come next summer; the Commissioner of Fisheries, according to present plans, will be here in June, and I expect to come back myself for a considerable stay later on."

He outlined the plans of his department to safeguard the Alaskan coast in the construction of lighthouses, coast and geodetic survey boats and additional aids to navigation. He announced that a biological laboratory for the Bureau of Fisheries would be established in the Northwest, and a supervising inspector of hulls and boilers would take up headquarters here, divorcing this district from California.

In an account of one feature of Secretary Redfield's visit, one of Seattle's leading daily papers said: "An analysis of the plans and capabilities of Uncle Sam, Empire Builder, would be a fair caption to the wonderfully interesting and convincing address made last evening by Secretary Redfield at a banquet tendered him at the Rainier Club. The Secretary spoke with the optimism of the successful business man that he is, and with the

judgment of his wide experience. Nor did he, while picturing the great future of Seattle, neglect to tell his hearers in plain language their duties to the Nation.

"If you and I, as business men," he said, "were sent to do a particular job, we would first look over the work to be done, then ascertain the necessary tools required, and then proceed to provide ourselves with those tools. We in the Cabinet approach our tasks in that very manner, but the trouble is that, owing to the laws of the land, we must proceed slowly.

"After surveying the job and ordering the tools we must wait for Congress to provide the money for the purchase of those tools. And thus it is that in preparing for better surveys of the Alaskan coast and for better handling of the fisheries of the North Pacific, our bureau can plan and advise and recommend, but it must wait for Congress to act."

Another of Seattle's great dailies, speaking of his visit to the city and the force of his addresses, said: "Ascendancy of Seattle as the commercial metropolis of the Pacific Coast, the gateway to Alaska and the Orient and the natural site for the greatest world-market of the Nation outside of New York City, was forecasted by William C. Redfield, Secretary of Commerce, in closing today a sojourn of three days in this city. The recognition accorded Seattle by Secretary Redfield was unanimously pronounced the most important in the city's history since Franklin K. Lane, Secretary of the Interior, came to Seattle and as a direct result lent his assistance to the securing of the Alaska Government Railroad."

The appointment of Bo Sweeney of Seattle as Assistant Secretary of the Interior, recently, is another event which gives a Seattle cast to the Government's program for the development of Alaska. Mr. Sweeney is an able exponent of both Seattle and Alaska, and his elevation to

this important position will give a Seattle emphasis to Pacific Coast progress during the remainder of the administration of Secretary Lane.

The first movement under the Alaska Railroad law was the appointment of William C. Edes, Lieut. Fredrick Mears, and Thomas Riggs to constitute the Alaska Engineering Commission to take charge of surveying and locating the new Government railroad in the Alaskan Territory. This Commission at once assembled in Seattle, where headquarters were opened in one of the office buildings of the Puget Sound metropolis; thus, in a general way, Seattle became the headquarters of government railroad construction in Alaska.

The Commission lost no time in selecting a staff of assistant surveyors and engineers, together with workmen and supplies, and almost immediately sailed for one of the harbors on Prince William Sound. The first party to leave was headed by Engineer W. C. Guerin. It sailed for Portage Bay early in June, in the Alameda, which made her first trip to that place to discharge the men, horses, instruments and equipment. This point, it is generally believed, will be the tidewater terminal of Alaska's main trunk railroad. Engineer Guerin is to make a topographical map of the eleven-mile pass that separates the waters of Passage Canal from those of Cook Inlet. This pass has already been examined and found to be practicable.

A large body of picked men accompanied Mr. Guerin, as also the other engineers who followed a little later. W. C. Edes, chairman of the Government Railroad Engineering Commission, will have personal charge of the location work on the section from Portage Bay to Susitna. "We will do all we can this summer," he said. "There are a lot of questions involved and we are using a big force of men so as to solve these problems as rapidly as pos-

sible." Mr. Edes, who is a noteworthy locating engineer, will establish his base of supplies at Ship Creek, on Cook Inlet.

Thus, it is seen that the Engineering Commission appointed under the new Alaska Railroad law already is on the ground in Alaska, and at work. The Government lost no time in inaugurating an active campaign to carry out the provisions of the new legislation, and the people of the country may rest assured that location and construction work will be pushed with the greatest possible speed until the new trunk line is in operation.

Another Seattle-Alaska viewpoint of the new movement for the development of Alaska and the Pacific Northwest rises upon the horizon of progress in the creditable announcement that more than ten millions of dollars are ready for investment in hydro-electric plants in Alaska as soon as the water power leasing bill, now before Congress, is enacted into law. It is stated that "already a small amount of development work has been done on Speel River at Snittersham, forty miles from Juneau, on a power site that will be used for the manufacture of nitrates, ammonia and other hydro-electric products. These can be made there cheaper than at any other place in the world. The people behind the proposition are ready to begin work on a large scale immediately on the passage of the bill.

Within a few years—not more than three or four at the most—Alaska each year will add to its mineral wealth several millions of dollars' worth of nitrates. Gov. J. F. A. Strong of Alaska recently declared that had the country not been swept by the craze of conservation, millions of dollars that have been sent from the Western states to Norway and to the plants at Niagara Falls would have gone to Alaska.

"More than $5,000,000 worth of nitrates were shipped to the port of Seattle last year from Norway. Had the

Territory of Alaska not been mismanaged, this material would have come from Alaska. The market for nitrates in the Western States and in the islands of the Pacific is enormous, and it is not improbable that the nitrate production of Alaska, within a few years, will rival, in value, the gold yield of the Territory.

"There is now before Congress a bill that provides for the leasing of the water powers of Alaska for a period of fifty years with option of renewal. If this bill is enacted into a law, not one, but many, nitrate plants will be installed. Alaska has a super-abundance of the necessary lime—whole mountain ranges of it, in fact—and it has the shipping facilities and the best water power in the world. One of the principal purposes of my recent journey to Washington was to advocate the passage of the water power leasing bill.

"This talk of conserving the water supply of Alaska is the veriest hysteria. There can be no conservation in allowing the water to run to waste in the ocean, where it never can be reclaimed. True conservation would be to conserve and utilize its energy. Water power is a continuous production. It does not wear out, and it will be there forever. The harnessing of the energy that is now running to waste, while the people of the United States send millions of dollars to a foreign country for the nitrates which it could produce, is anything but conservation. The money expended for nitrates should be kept among our own people."

Falcon Joslin, author of the foregoing three paragraphs, the famous pioneer of Fairbanks, in a recent visit to Seattle, said: "In Alaska and in the State of Washington are tremendous deposits of iron, some of them carrying a very high percentage of manganese. Because no coking coal is available, except that in Alaska, these ore beds are not mined. Those who do a little smelting on the Pacific

Coast import their coke from Australia and in some cases from Belgium. A little coke has been brought from Pennsylvania, but, coke being bulky and difficult to handle, it is cheaper to import the steel.

"It is highly probable that one of the big industries of Alaska in the future will be the manufacture of steel, and the sooner the coke is available the sooner will a start be made. In Norway and Sweden, the manufacture of steel is a big industry. There is no reason why the same is not true of Alaska. The Territory has both the iron ore and the coke."

There is in the Seattle-Alaska viewpoint of the new Alaska movement, now partly under way, by the Federal Government, several important prospects which give promise of realization within a reasonably short period of time. These may be enumerated in the following order:

1. A new era of prosperity for Seattle in which, and probably within the next ten or fifteen years, its population, its wealth, and its industrial and commercial importance will be nearly if not even more than doubled, with a corresponding growth and development of all Puget Sound points, and the more favored districts of Washington, Oregon and California.

2. An epoch-making increase in the transportation and commerce of the North Pacific, as well as of the carrying trade of transcontinental railroads running from the Northeast, the East, the Southeast and the South into Seattle.

3. The phenomenal rise of a great new city on the borders of the most available harbor at the head of Prince William Sound in Alaska.

4. The realization of a great ocean and land transportation line connecting Seattle, the new city on Prince William Sound and Fairbanks. This may be a Government owned and a Government managed highway of com-

mercial industry, both as to its ocean and Alaska land divisions. It will raise Fairbanks to great commercial and industrial importance and create several cities along the line of the land division and those of its branches.

5. The building of other Alaska rail transportation lines and highways, and the settlement and development, both as to agriculture and all other industries for which the great Territory is adapted, of the Kuskokwim, Yukon, Tanana, and other river valleys and basins.

6. A vast increase in the population of Alaska and a wonderful economic, ethical, educational and social development of its people.

7. A phenomenal growth of commerce between Alaska and Seattle, and between both of these points and nearly all parts of the United States, the Orient, and by means of the Panama Canal and the transcontinental railway systems, with European countries.

8. The establishment of vast smelting plants in Alaska, which, by means of cheap fuel, many mines and millions of tons of pay ore now lying unused or still buried in the crust of the earth, will pour great riches into the pockets of the needy of many nations.

9. The inauguration of large iron and steel industries in Alaska, and at convenient points in the North Pacific country.

To these features many others of nearly equal importance might be added; and should these things be realized, even in part, within a reasonable period, a grateful people will not fail to credit the sagacity, bravery, skill and honest earnestness of Franklin K. Lane, Secretary of the Interior, who now appears to be doing his duty in a broad, statesmanlike manner regardless of politics. Nor will the people forget that behind, and, in some respects, above this able man, loyally stands President Wilson, who discovered and called him to the great task.

CHAPTER XXV.

PROBABLE RUSH TO ALASKA IN 1915.

March of Empire from Europe to America, and from the East to the West of America—Near Future Rise of the West and Alaska—The Commercial Conquest of the Pacific to Engage the Friendly Energies of Japan, China and America—The Rush to Alaska in 1915 Predicted.

ALASKA suffered a period of inactivity and stagnation from 1910 to the beginning of 1914. The various causes responsible for this unfortunate condition already have been sufficiently explained. The opening of 1914 marks the beginning of a new era of progress for the Northland Territory. This is because the policy of the present National Administration provides for a new and more vigorous program of development of resources, industries and commerce in the Pacific Northwest, Alaska and on the Pacific Ocean. This policy is wonderfully opportune because its advent is contemporary with the opening of the Panama Canal, which signalizes a new departure in the progress of all the Pacific countries, Occidental and Oriental.

It becomes plain that the Panama Canal, on the one hand, and Alaska, on the other, with the hardy, indomitable pioneers which inhabit the Pacific States lying between, will unite in this new program of development, until the supremacy of the Pacific is established and the Oriental nations are transformed; and, that while our East of America will continue to prosper, the Pacific West will

rise vastly superior to it, in industrial and commercial importance. The wisdom of the Wilson Administration, and the sagacity of Franklin K. Lane, its able Secretary of the Interior, consist in a discovery of these plainly visible land marks of progress, and of conforming public policy to harmonize with them.

The government strenuously is at work inaugurating and carrying forward its grand new program for the more speedy development of Alaska and the Pacific States. The engineering corps is on the ground in Alaska locating a railroad transportation system; Congress is pressing forward legislation for the better government of Alaska, for the more equitable regulation of its timber, coal and agricultural lands and water powers, and for the improvement of its harbors, with more efficient aids to navigation. These things will be accomplished this year, or, some of them, early in 1915. In the latter year, construction work will succeed the railroad location enterprises of this year, and a vast army of men and teams, with power machinery, will cover Alaska in the prosecution of transforming barriers to travel into highways of transportation. Thousands of farmers from Northern Europe and the older portions of Northern United States and the Dominion of Canada will flock to Alaska to take advantage of the open, free agricultural lands; and the writer hopes that Congress will provide the means of assisting them in this movement.

Along with this great influx of population, mining and other industrial undertakings will receive a new impetus in Alaska, and in the whole Pacific Northwest. In this awakening, the people of Mexico, among whom it is believed peace will have been established, will turn their energies from the pursuit of war, to internal development work, and add the wonderful, undeveloped wealth of that great country to the general flow of the riches of Alaska and the Pacific States to the nations of the earth. It is certain that as this development proceeds, in some way, the people of Mexico will be awakened from the pursuit

of idleness and rebellion to the peaceful industry of developing the great natural wealth of their vast empire.

The Panama-Pacific Exposition takes place in San Francisco in 1915. It will be a fitting emphasis of the great movement here so feebly described, but from the nature of the national prospect, which it will voice, it will be as much a celebration of the new opening of Alaska, as of the inauguration of the Panama Canal service.

There has been too much said in and out of the press of the United States concerning alleged conflicts of national interests between this nation and Japan. The new opening of Alaska, and the rise of the Pacific States will dissolve this imaginary war cloud, and reveal to the world the natural interrelationship of abiding friendship between Japan and this country. This new movement of far western development means a closer union of material interests between the Orient and the Occident.

The commercial supremacy of the Pacific will bind together in a strong commercial alliance Japan, China and America, and this consummation is sure of realization within a decade. In destiny, Japan is our closest friend. It remains only for the United States to work out this natural relationship by a wise diplomacy, based upon the new commercial requirements of the two countries.

This grand prospect is illuminated by what I can see as a great movement of population and capital from the East, in both America and Europe, to the West, and to Alaska in 1915. It surely must take place. It will come to overtax the capacities of the transcontinental railroad lines of America, and the ocean conveniences of transportation between Seattle and Alaska. It will come not only because of the enjoyments to be realized at the San Francisco Fair, but because of the wealth to be secured in Alaska; and there are good grounds for saying that the latter will prove the predominating attraction. The success of the exposition is assured by the more substantial

Alaskan opportunities. Many will go to the fair who will not go to Alaska, but thousands will go to Alaska who will have neither the time nor the means to devote to the pleasurable attractions at San Francisco.

And thus, the new era of material prosperity in Alaska and the Pacific Northwest, will be inaugurated in 1915. It certainly will mark a wonderful new beginning of progress in Seattle.

It is to be observed that the agricultural attractions of Alaska already are receiving attention. It is reliably reported that one hundred and fifty-five homesteaders, says the Seattle Times in a recent issue, have been taken up in the Matanuska and Susitna Valleys in the month of June. More than 400 farmers are scattered through the country looking for favorable locations. These are the first of the great band of American farmers, which, it is anticipated, will have made their home in Alaska within the next few years. Many of them have returned to Seattle to ship their stock and farming implements, while others are building cabins and cutting hay for the coming winter.

One of the discoveries made by the farmers is that these sections of the country are overrun with a wild potato vine, which, it is claimed, carries a large amount of starch and a small percentage of saccharine, and resembles the sweet potato. It is believed that this is the plant that forms a large part of the food eaten by the herds of moose and other wild game animals that here have their habitat.

Axel Olsen, formerly of Nome, who had been in this country twenty years, headed a party of Washington farmers, all of whom took up homesteads. He returned to Seattle a few days ago to ship a number of prize Holstein and Jersey stock and a complete farming equipment. He brought with him samples of the wild potato, alfalfa and bluestem hay. He will return on one of the first boats to Knik and cut about 100 tons of wild hay for the winter.

"This is the best agricultural country I ever have seen," Olsen said, "and not the least of its attractions is that no irrigation is needed. It is quite as good as the best farming land I have seen in Washington, Oregon or California. I met Bob Bittner, who was formerly superintendent for the Wild Goose Company at Nome. He grew cabbages last year which reached seventeen pounds each, and he didn't plant them—just scattered the seed on the ground in the spring before going out prospecting. He found a splendid crop when he returned. Billy Elliott, known as 'Billy, the Horse,' also has taken up a farm, and so have the Danielson brothers and many other Northerners.

"The prospectors in that country let their stock run on the range all winter and feed on the open range. While the local fodder makes them fat, they do not work well upon it. It is my judgment and that of a number of stockmen whom I met in the country that a few years will see thousands of cattle on the hills in the Cook Inlet country. It is the best grass country I ever have seen, and the climate is more temperate than that of Montana or North and South Dakota.

"Next year I will plant a number of acres of grain and beets and other roots, and I expect to be able to grow several tons of rutabagas this year."

Recent reliable reports from Alaska not only indicate that the new prosperity already has started in the great wonderland, but strongly emphasize the things most needed to perpetuate it. People of Seattle returning from different parts of the Territory, who recently have visited it, report that already business is increasing. One says that the deposits in the Bank of Seward have increased over $50,000 since the passage of the Alaska railway bill, and that there never was felt more confidence by Alaskans as to the future of the country than at the present time.

New people are arriving in Alaska, and many former residents already have returned to the country, especially in Cordova, Valdez and Seward.

Cordova has organized an information bureau to answer the numerous inquiries being received from various parts of the East and Middle West. The mining prospect about Valdez is very encouraging. The Granby Company has taken over the Middle mine near Valdez and has a considerable force of men already at work. It is said that this property soon will become a steady shipper to the new Granby smelter at Anyox, or Portland Canal. There already are a number of such evidences of actual renewal of activity, but, of course, for the greater part, the animation is based upon the future prospects rather than anything that has yet materialized.

But the people of Alaska realize that railway construction alone will not bring about the prosperity of the country. The thing absolutely necessary is the opening of the coal fields, and they are impatiently waiting for the passage of a workable leasing bill. The reports from Washington City on this behalf have recently created considerable anxiety in the Territory, because there appears to be some foundation for doubting whether Congress will pass a bill which will meet the needs of the situation.

A very important feature is the manufacture of coke. An assured supply of coke at a reasonable cost would mean copper smelters, or matting plants along the Alaska coast where the lower grade ores could be mined and treated on the ground at a profit.

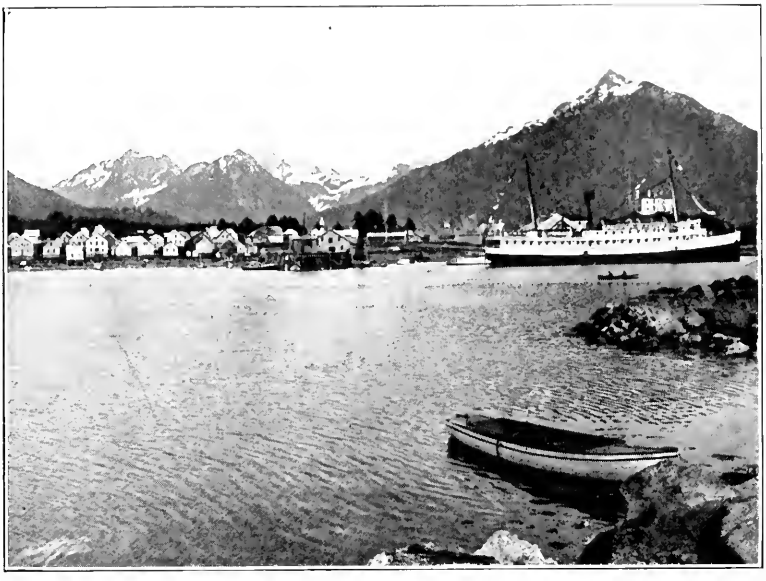
One recent report says: "Mining development has made steady progress, however, in a quiet way, even during the past few years. The advent of the Granby company bids fair to become as important in the copper fields as the new companies in the gold mines at Juneau. However, their smelter is on the British Columbia side by Portland Canal. We will have no copper smelters operat-

ing in Alaska until Alaska coke is made available. The two idle smelters on the Alaska coast have tried with disastrous results to smelt ores with British Columbia and Australian coke."

Says Governor Strong, "the agricultural possibilities of Alaska are not a myth: it has vast areas of land suitable for agriculture, dairying and stock-raising purposes." Experiments have shown that the soil will respond abundantly to the efforts of the farmer; that dairying can be carried on profitably, and that the possibilities for stock-raising, especially in Western Alaska, are such as to invite the careful attention of the stock raiser.

The development of vegetable crops in Alaska is attracting attention. Alaskans are beginning to realize that the stiff prices they pay for provisions, especially fresh vegetables, in the States, entitle them to a quality of goods superior to what they receive. That it is almost impossible to ship soft vegetables or fruit from the chief distributing points in the United States in an acceptable condition, is also beginning to impress itself upon the people of that territory. As a result, they have chosen the only solution to the question, that of raising their own vegetables, on a small scale at present, to be sure, but one which is yearly increasing and promises to soon place the entire territory on the map as an agricultural as well as mining country.

This is the assertion of L. C. Willy, United States mineral surveyor and United States deputy surveyor in Alaska, who has just returned from an official visit to the territory. Mr. Willy states that the vegetables received in the North, no matter how well packed at Southern markets, are almost flavorless when they reach their destination and as such enormous prices are paid for the commodities, the people have at last conceived the idea of becoming self-sustaining as far as this is possible.



VIEW OF SITKA, ALASKA

Photo by Curtis & Miller. Courtesy W. P. & Y. R.

JUNEAU—CAPITAL OF ALASKA

Photo by Curtis & Miller. Courtesy W. P. & Y. R.

"When the agricultural possibilities of Alaska are discussed, the argument at once drifts to the finest farming land in the country, that on Cook Inlet," he said. "Not so far north that its products will be affected by the extreme cold of the winter and just near enough to the cities in the barren sections to make the shipment of its products to these places a matter of a few hours or a day at the most, its location is ideal as the source of Alaska's vegetable supply. The Cook Inlet territory could grow garden truck enough to supply all the miners of the North.

"The land in that district is equal to the best on the American continent. Black and rich as any found between the Gulf of Mexico and the Arctic, it has the individual quality of being exceptionally light, allowing the root vegetables which grow in it to mature to enormous sizes and at the same time solid and juicy. Although many miles from the ocean, it is at sea level and because of this fact, a continuous supply of moisture is furnished to the growing plants. The summers there are long and warm while the winters are mild and short. More favorable agricultural conditions would be hard to find.

"As Seattleites are probably aware, vegetables from Knik, Alaska, took first prize among the vegetables of that country at the Alaska-Yukon-Pacific Exposition in Seattle. Cook Inlet was not then developed as an agricultural center but has since been credited with having produced superior stock to any before raised in Alaska.

"With many men entering Alaska with the one purpose in view of developing the agricultural possibilities of the country, it seems that Alaska will soon no longer depend upon shipments for her vegetable supply, but will startle the world by the quality and enormous quantity of her individual output. That Alaska will ship vegetables in the near future is a prediction made by many who realize the size of the agricultural movements in the North."

Among the many other items at hand showing that the new prosperity of Alaska already is in evidence may be mentioned reports from Southeastern Alaska indicating the growth of towns in that section. One dependable report says: "Juneau's population has doubled in the last two years and is now approximately 5,000, while Ketchikan also is going ahead, building a cold storage plant and concrete business blocks, and otherwise assuming metropolitan airs. Juneau is rapidly becoming one of the livest cities on the Coast."

The same report continues: "An immense amount of development work is under way for the Alaska Juneau Mining Company, the Gastineau Mining Company and the Ebner Mining Company." Similar good news comes from Ketchikan and other Southeastern Alaska points.

The claim that Alaskan prosperity entered upon a new and more promising era simultaneously with the removal of the political lid which had been placed upon its resources prior to 1913 is clearly and strongly supported by the report of the customs district of Washington for the first ten months of the fiscal year which closed on June 30, 1914. This report marks an increase of $1,539,549 over the first ten months of the 1913 fiscal period. Records compiled by the Department of Commerce and Labor and received at the Seattle custom house on June 30, reveal this tremendous increase.

Steadily increasing each month, the total value of north bound Alaskan commerce through this district reached $14,105,689, during the ten months intervening from July 1, 1913, to April 30, 1914. In the corresponding ten months of the preceding fiscal year, the value of Alaska commerce from this district was $12,566,140.

It is also revealed in the report that the customs district of Washington handles at least six times as much of Alaska's import commerce as all of the remaining districts of the Pacific Coast combined. San Francisco, Oregon

and Southern California together handled only approximately $2,300,000 Alaska trade in ten months, while Washington's total, as has already been given, is in excess of $14,000,000.

San Francisco, Seattle's closest rival for Alaska trade, makes a small showing in comparison with the stupendous record of the Washington customs district. In the period covered by the report, San Francisco's trade amounted to but $2,514,734 and the percentage of increase, when compared with the previous year, is remarkably small, the total increase in value amounting to $168,699.

Exports from the Washington district to all countries during the first ten months of the fiscal year were $48,657,335, and imports were $45,844,940. These figures reveal a condition found only in a few of the customs districts of the United States where the rule has been for the value of imports to exceed the value of exports. This district is shown as doing more than her share to keep the balance between imports and exports on the export side of the ledger.

Reports covering the entire fiscal year which ended June 30, 1914, will not be available for several months, as figures from all parts of the United States must be assembled and compiled before an official report can be published.

CHAPTER XXVI.

THE LID ON AND THE LID OFF POLICIES.

PROSPERITY OF THE GREAT PACIFIC NORTHWEST WHOLLY DEPENDENT UPON THE ATTITUDE OF CONGRESS—ATTITUDE OF THE EAST—THE SHORT SIGHTED POLICY OF EASTERN INTERESTS—CONTINUATION OF THE EDUCATIONAL CAMPAIGN OF THE SEATTLE CHAMBER OF COMMERCE MUCH NEEDED.

THIS great movement for the economic development of the Pacific West, opens to the people a vast number of new industrial, business, commercial and speculative opportunities, of a variety and character which surely will relieve the depression until now so generally and severely felt throughout the country. Mining operations in Alaska, both as to coal and the precious metals, at once will multiply and this increased activity will spread to the State of Washington.

Seattle, as the chief trading metropolis of the North Pacific country, will extend its borders, expand its already commodious dockage system, multiply its storehouses, increase the number of its office buildings, greatly add to its attractive residence areas, improve and enlarge its internal and suburban rapid transit systems, increase and improve its already efficient educational institutions, perfect its municipal government, secure a multiplication of its transportation facilities on both land and water, double its present population of over 313,000, in a reasonably short period, and long before the middle of the present century is reached, become one of the greatest industrial and commercial cities of the United States.

Great iron and steel industries will rise in Alaska and on the borders of Puget Sound, and shipbuilding will rise to a first place, at several locations in the districts named. It plainly is seen from what has been said that a new and greater demand will be created for the profitable prosecution of this last named industry. This is the greatest need of the nation today.

But what section of the United States and what class of people of its population will this wonderful development most benefit? The East, and those who now control the main arteries of industry, trade and commerce, of course! It will require more than one generation to transfer the financial source of the United States from New York to Seattle and San Francisco. Indeed this never may be achieved. Westward progress does not naturally contemplate such a thing. On the contrary, when progress has established Seattle and San Francisco as the financial sources of a new Orient, New York will still remain the source of financial strength and control of Seattle and San Francisco.

The East, so far as the Eastern policy has found expression in Congress, concerning the immediate development of Alaska and the Great Far West, is manifestly very short sighted. It is the *source* of the wealth of the nation that is travelling westward in America, and not the wealth itself.

The expenditure of millions of dollars, and even hundreds of millions of dollars by the National Government for the purpose of providing transportation facilities for Alaska, in order that its vast resources may be developed, constitutes the most profitable investment that the nation can make for the people of the East and Central divisions of the country, because the more rapidly the far West is peopled and its wonderful resources exploited, the more swiftly will the wealth of the East accumulate. It is a short sighted argument, I say, which pits the resources of the East against the early development of those of the

West, in an effort to maintain the industrial, commercial and financial supremacy of the East, by holding the markets of the world for an exclusive eastern output, as against the products of the West. The gains in wealth to the nation do not flow, and can not rise any more from eastern than western products, not even so far as eastern traders and bankers are concerned. Eastern producers may find vent for a selfish policy in this respect, but so far as it is permitted to triumph, in that same measure the nation as a whole must suffer.

It certainly falls short of a wise national policy to hold back the natural wealth of the far West, until the natural resources of the East are drained to the dregs. On what ground of national policy should the coals of Alaska and Washington be held beneath the surface of the earth, until all the coals of the East have been mined and consumed, especially when it adds more than twenty per cent to the cost of eastern coals to haul them to the Pacific Slope? On what foundation of national economy can we find support for the doctrine that far western timber should be left to age and decay in Alaskan and Pacific States forests, until the last stick of timber in the East has been converted into lumber and marketed? There is a natural demand of international commerce greater than those of sectional requirements, and a policy which prevents any locality from reaching the world's markets with its products is a detriment to the nation as a whole in which such locality is contained.

Because the East is deficient in fishery resources to supply the demands of European markets, not a voice is raised against the development of Pacific Coast fisheries, either for local consumption or export, but when it comes to coals and timber, and other classes of products which the East still is able to supply, in some measure, a disposition is manifested to protect these products, to the disadvantage of the West, in order to maintain abnormal and unnatural prices.

Surely the time had come in the West to take the lid off the natural resources of Alaska and the Pacific Northwest, and it must be a matter of congratulation to the far western people, to say the least, that the Wilson Administration has committed itself to a program which includes this procedure, even at the risk of offending the timber, coal, iron and steel barons of the East.

These very brief observations will disclose to the average reader the real foundation for the great era of material prosperity for the Pacific Northwest and Alaska predicted in this and the preceding two chapters. It is not because the natural resources abound in this great part of the country, merely, but because they are now to be *politically unlocked,* if you please, that these optimistic predictions are made. This phase of the problem is far more important than appears on the surface. The "lid on" policy has prevailed towards the Mountain and Pacific States and Alaska for a long period—prevailed until during the past few years a pall of stagnation has spread over the whole western country. This poverty stricken condition quickly will disappear if the "lid off" policy, now being inaugurated, is fully established and persistently maintained.

The railroads which in the late years have struggled against adverse legislation could not reasonably have been expected to raise a voice against Eastern interference with far Western developments of natural resources, since it has been to their gain to carry coals, steel and the whole variety of ready made uses to the West, rather than to have encouraged the rise of great manufacturing industries in the Pacific territories. The "lid off" program means not only the exploitation of the vast natural resources of the Pacific West, but the development of manufacturing industries in great volume and variety in Alaska, Washington, Oregon and California.

It is, I repeat, upon the ground that this "lid off" policy of Secretaries Lane and Redfield will be fully

established and uninterruptedly maintained that these predictions of the almost immediate prosperity of the Pacific West will be realized. If there be any failure, or reversal of economic policies in this behalf, the prospect here set forth in such glowing terms soon again will become clouded, and the Western country will fall back into its recently accustomed inactivity. The Seattle Chamber of Commerce, rising above political considerations of a party nature, has performed a most wonderful service for the West and for the nation, in its achievements, by way of an educational campaign during the past two years, but as already stated, if that body, and the forces affiliated with it now assume an attitude of finished work, a great error will be committed. The grand work thus far achieved, at best, constitutes only a beginning. The campaign must be continued, else failure will overtake success.

It is useless to close our vision to the reasonable expectation that a strenuous effort will be made in the East this year, 1914, and in the two years following, to so change the complexion of Congress and the government of the nation, that this "lid off" policy will find a speedy substitution in the old "lid on" program. This somewhat natural but sectionally selfish tendency of Eastern interests is due, of course, to widespread prejudice which rests upon the need of a greater and better knowledge of the natural capabilities of Alaska and the Pacific West generally. This condition should be overcome by a continuation of the campaign of education begun by the Seattle Chamber of Commerce with results already splendid to behold. One naturally turns to this body for even a more extended effort than it yet has made on account of the grand effects of what it has accomplished, already realized by the people of the United States.

As an example of the tendency of Eastern and Southern congressmen to keep the "lid on" in Alaska, on June 15, 1914, when Delegate Wickersham, of Alaska, tried

to have his bill passed repealing the law taxing railroads in Alaska $100 a mile, objections were heard from members from Connecticut and Louisiana and other Eastern States, some of them with amendments which would have destroyed the good effects of the bill. As it was "unanimous consent" day the bill was ruled out. It is useless to deny that there is an Eastern element in Congress, backed by certain Southern influences, which is seeking to obstruct Alaskan legislation in the interests of sectional classes. The Alaska railroad taxation law is a detriment to Northwestern progress and should be repealed.

Since the foregoing was written the bill above referred to has become a law.

CHAPTER XXVII.

THE GREAT YUKON VALLEY.

THE YUKON AND THE KUSKOKWIM — INLAND NAVIGATION ROUTES—MAIL SERVICE SUMMER AND WINTER—TIME AND DISTANCES—THE COMMERCE OF INTERIOR ALASKA —TABLES OF DISTANCE.

THE valley of the Yukon, and its tributary rivers, was little known until 1883. The Russian Church had established a few isolated missions upon the lower waters of the Yukon and Kuskokwim rivers and venturesome voyageurs of the Hudson's Bay Company had entered the valley from the East but the temper of the natives and natural obstacles pretty effectively prevented any extensive explorations from the West, while the lofty and rugged mountains of the eastern and southern boundaries interposed a barrier long considered impassable even by the most adventurous. Yet from the latter quarter the first invasion of the Yukon eventually came. Gold was discovered at Stewart River on the Canadian side in 1883, and in 1884, as we have seen, the first rush spread over this region. It was the incentive of gold, of course, which induced white people to enter the country. This is not a cause of much wonder when it is considered that Alaska has produced over $200,000,000, and the Canadian Yukon over $150,000,000 since that time.

Today the Northern Navigation Company operates a fleet of thirty-two steamers and thirty-five barges, totalling nearly 30,000 tons, on the Yukon and tributary rivers. Over three thousand five hundred miles of inland

waterways are traversed, and residents along and adjacent to these streams depend almost entirely upon this fleet, and, to some extent, upon competing vessels, for mail and general transportation service. The principal routes covered up to this time are:

St. Michael—Dawson	1601 miles
Dawson—Fairbanks	975 miles
St. Michael—Fairbanks	1176 miles
St. Michael—Bettles	1150 miles
St. Michael—Diskaket	700 miles
St. Michael—Iditarod	708 miles
Bethel—Tacotna	529 miles

The Northern Commercial Company maintains a chain of stores and warehouses along the valleys of the Yukon River and its tributaries. These stations are located as follows:

St. Michael, Alaska	On Bering Sea
Andreaofsky, Alaska	On Yukon River
Dikeman, Alaska	On Iditarod River
Iditarod, Alaska	On Iditarod River
Nulato, Alaska	On Yukon River
Bettles, Alaska	On Koyukuk River
Wiseman, Alaska	On Koyukuk River
Alatna (Marsans), Alaska	On Koyukuk River
Ruby, Alaska	On Yukon River
Tanana, Alaska	On Yukon River
Hot Springs, Alaska	On Tanana River
Fairbanks, Alaska	On Tanana River
Circle, Alaska	On Yukon River
Eagle, Alaska	On Yukon River
Forty Mile, Yukon Territory, Canada	On Yukon River
Dawson, Yukon Territory, Canada	On Yukon River
Georgetown, Alaska	On Kuskokwim River
Tacotna, Alaska	On Tacotna River

At all points are carried large stocks, comprising complete assortments of groceries and provisions, mining

implements and machinery, hardware and such other supplies as are necessary to the comfort and welfare of residents of the country.

Agents and storekeepers are chosen for their experience in camp and on trail, hence are highly competent to select stocks and offer valuable suggestions to inexperienced purchasers.

Summer Mail Service.—At the present time, during the season of open navigation, June 1 to September 30, mail reaches the interior of Alaska via St. Michael and the lower Yukon, and via Skagway, Dawson and the upper Yukon. This service is so frequent that to await specific sailings is unnecessary, mail deposited at any time certainly being forwarded within three or four days. From Seattle the time in transit in summer for mail to important points is approximately:

Nome	8 days
St. Michael	9 days
Fairbanks	16 days
Tanana	14 days
Rampart	14 days
Circle	12 days
Eagle	11 days
Dawson	9 days
Iditarod	15 days

Winter Mail Service.—During winter, mails for Fairbanks and vicinity, for Tanana, for Rampart, for points on the Yukon below Rampart, for Bettles and all Koyukuk River points, for Innoko, Iditarod and Kuskokwim River points, for St. Michael and for Nome and vicinity, are despatched from Seattle six times monthly by steamer to Cordova, thence by Copper River and Northwestern Railway to Chitina and thence by horse-stage to Fairbanks and Tanana. Below and above Tanana, service is by dog-team. Points on the upper Yukon, including Dawson,

Forty Mile, Eagle and Circle, are served via steamer to Skagway, rail to White Horse, horse-stage to Dawson and dog-team to points beyond. Time from Seattle to important points is:

Via Cordova—

Fairbanks	14 days
Tanana	19 days
Rampart	20 days
Bettles	24 days
St. Michael	36 days
Nome	40 days
Iditarod	34 days

Via Dawson—

Dawson	10 days
Forty Mile	11 days
Eagle	12 days
Circle	15 days

TELEGRAPH COMMUNICATIONS to practically all interior points excepting Bettles, may be had the entire year over the wires of the Signal Service of the United States Army by means of submarine cable from Seattle to Valdez by way of Sitka and land lines serving most of the Territory. A wireless system, also controlled by the Signal Service, is very efficient, stations being maintained at Eagle, Circle, Tanana, Fairbanks, Kotlik, St. Michael, Nome, Kaltag, Nulato and Iditarod, while new stations are established as occasion demands. In event of temporary suspension of the United States Government service, telegraph communication by means of Canadian land lines via Dawson is available.

The great rivers of Central Alaska, as already stated, are the Yukon and the Kuskokwim. The Yukon system of waterways includes, in addition to the mighty Yukon itself, such important tributaries as the Tanana, Koyukuk, Innoko, Iditarod, Chandela, Porcupine and Dahl, and a large number of smaller tributaries. This system drains,

in Alaska and Canada, over 600,000 square miles and affords more than 4,000 miles of navigable water, 3,500 miles of which are in Alaska alone.

The importance of these vast rivers in their relation to the physical development of the Territory is inestimable. They are the only highways giving access to the mining districts of the interior during the summer and the only means, aside from the telegraph, of intercommunication between settlements. Government reports show that merchandise valued at $3,500,000 annually reaches the mining camps adjacent to their banks, and thousands of travelers traverse their waters.

The Kuskokwim.—Reference to the map shows that the Kuskokwim, having its origin in the Alaska Range in the neighborhood of Mt. McKinley, follows a course approximately paralleling the Yukon and empties into Bering Sea some two hundred miles south of the Yukon delta. The Kuskokwim is the second largest of the Alaskan rivers and is navigable for at least 800 miles. About four hundred prospectors are working in the Kuskokwim Valley and, while we have no authentic news that any paying mines have been uncovered, prospects are said to be very encouraging. Unlike the Yukon Valley, the ground here is not frozen and carries much water, and prospectors should be equipped with drills to facilitate their investigations.

There are three routes for reaching the Kuskokwim; from Bering Sea via the river mouth, from the Yukon River by portage commencing at Russian Mission, and by trail from Iditarod City.

The First Route.—Via the river mouth from Bering Sea, is the most direct and should be used for freight shipments whenever possible. The passenger trade is not sufficient, however, to warrant the operation of passenger boats on any fixed schedule, and the power-boats usually used to transport freight furnish a most uncertain passenger service.

THE SECOND ROUTE.—Via the portage from Russian Mission, is little used, being both unpleasant and expensive. Guides and boats are necessary, for the way lies through swampy country and follows the devious windings of many sloughs, passage from one to another being by portage which must be crossed by dragging boats and packing supplies. Furthermore, no adequate accommodation is to be had at Kalkagamute, where the traveler reaches the Kuskokwim. This route requires three days' hard travel through a mosquito infested country to accomplish the seventy miles from Russian Mission. It should not be considered excepting in emergency.

THE THIRD ROUTE.—Via Iditarod, is the most comfortable and reliable. River boats offer frequent service from St. Michael to the upper Iditarod River and from Iditarod City is a good trail, seventy miles long, leading to Georgetown on the Kuskokwim, where accommodations and supplies may be obtained. Georgetown is advantageously located for prospectors in the Kuskokwim Valley.

The Northern Navigation Company has two river boats on the Kuskokwim and the Northern Commercial Company has established stores at Georgetown, 242 miles above Bethel —the head of salt-water navigation—and at Tacotna, 529 miles above Bethel. Tacotna is on Tacotna River, a tributary of the upper Kuskokwim.

TABLES OF DISTANCE.

On Yukon River from St. Michael—

Kotlik	67 miles
Andreaofsky	181 miles
Russian Mission	293 miles
Holy Cross	358 miles
Anvik	405 miles
Thompsons	450 miles
Kaltag	570 miles

Nulato	610 miles
Koyukuk	630 miles
Louden	682 miles
Melozi	715 miles
Ruby	738 miles
Kokrines	762 miles
Birches	846 miles
Tanana	901 miles
Rampart	981 miles
Fort Hamlin	1072 miles
Fort Yukon	1224 miles
Circle	1309 miles
Woodchopper Creek	1359 miles
Eagle	1499 miles
Cliff Creek	1537 miles
Forty Mile, Yukon Territory	1548 miles
Dawson, Yukon Territory	1601 miles

On Innoko River from Holy Cross—

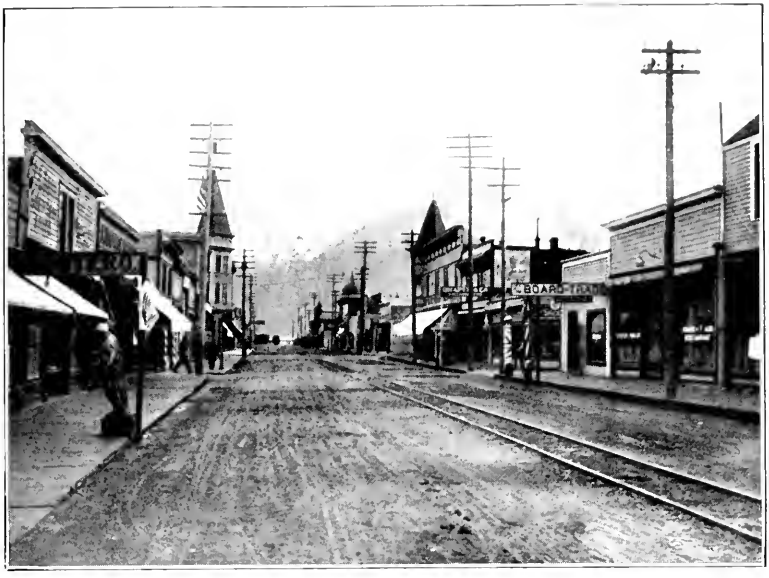
Innoko River Mouth	110 miles
Iditarod River Mouth	160 miles
Diskaket	370 miles

On Iditarod River from Holy Cross—

Shageluk	50 miles
Holikachuk	110 miles
Dementi	160 miles
Fish Camp	240 miles
Langley	310 miles
Dikeman	320 miles

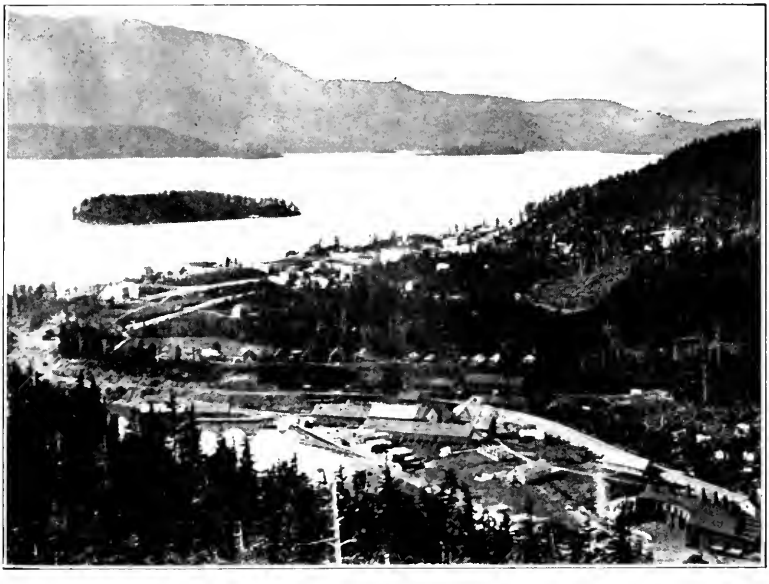
On Koyukuk River from Confluence with Yukon—

Dagetkaket	132 miles
Dublikaket	175 miles
Seattle Point	220 miles
Hog River	315 miles
Hughes	375 miles
Red Mountain	404 miles
Arctic City	457 miles
Alatna	470 miles



SKAGWAY, ALASKA—SOUTHERN TERMINUS W. P. & Y. R.

Photo by Curtis & Miller. Courtesy W. P. & Y. R.



CORDOVA, ALASKA—SOUTHERN TERMINUS C. R. & N. RY.

Peavey	508 miles
Bettles	540 miles
Coldfoot	600 miles
Wiseman	620 miles

On Tanana River from Confluence with Yukon—

Fish Creek	15 miles
Hot Springs	70 miles
Kantishna River Mouth	123 miles
Tolovana	133 miles
Minto	183 miles
Nenana	198 miles
Wood River	218 miles
Chena	263 miles
Fairbanks	275 miles
Salcha	330 miles
Delta	350 miles
McCarty	392 miles

On Kuskokwim River from Bethel—

Toolicsok	60 miles
Yukon Portage	100 miles
Kolmakofsky	190 miles
Georgetown	260 miles
Sleitmute	295 miles
Andranoff	385 miles
McGrath	500 miles
Tacotna Forks	520 miles

On Bering Sea Coast—

Nome to St. Michael	115 miles
Nome to Golovin	81 miles
Nome to Topkuk	47 miles
Nome to Solomon	30 miles
Nome to Teller	90 miles
Teller to Tin City	35 miles
Tin City to Deering	184 miles
Deering to Keewalik	22 miles
Nome to Keewalik direct	293 miles

On Ocean—

San Francisco to Unalaska	2086 miles
San Francisco to Nome	2731 miles
San Francisco to St. Michael	2846 miles
Seattle to Unalaska	1727 miles
Seattle to Nome	2372 miles
Seattle to St. Michael	2487 miles

Winter Trail from Chitina to Fairbanks—

Chitina	0 miles
Poplar Lake	4 miles
Nafsteds	15 miles
Woodland	27 miles
Willow Creek	39 miles
Copper Center	51 miles
Tazlina	59 miles
Dry Creek	67 miles
Gulkana	77 miles
Poplar Grove	89 miles
Sourdough	99 miles
Our Home	115 miles
Meiers	125 miles
Paxsons	138 miles
McCallums	158 miles
Millers	170 miles
Rapids	181 miles
Donnellys	195 miles
Gordons	211 miles
Sullivans	227 miles
Delta	250 miles
Overland	260 miles
Salchaket	270 miles
Thirty Mile House	282 miles
Bylers	292 miles
Sixteen Mile House	294 miles
Eight Mile House	302 miles
Fairbanks	310 miles

CHAPTER XXVIII.

GOLD DREDGING A GREAT OPPORTUNITY

PLACER MINING ADVANCING FROM THE PICK AND THE SHOVEL TO THE DREDGE MACHINE—GREAT AURIFEROUS GRAVEL BEDS AWAIT THE TOUCH OF CAPITAL—THE KENAI PENINSULA WITH SEWARD AS ITS METROPOLIS LIKELY TO BE THE SCENE OF GREAT DREDGING ENTERPRISES IN THE NEAR FUTURE—PROFITABLE OPPORTUNITY FOR MANY MILLIONS.

A BRIEF survey of some of the great industrial and business opportunities which this new opening of Alaska is making available to the capital, skill and enterprise of the people generally, will prove useful to many readers. Men and women are writing to their friends in Alaska, and in Seattle, for specific information as to new opportunities in Alaska and the Pacific Northwest, and although this general demand has been pretty fully met on the foregoing pages, the attempt is made here to supplement this general information with definite explanations as to the attractions which one of the most important of these immediately available openings present, and in what way they may be made available.

It has been stated in several places in this volume that dredging in Alaska is succeeding the old methods of placer mining, and now attention is called to the fact that this succession is opening important new opportunities to enterprise and capital. An experienced min-

ing engineer remarked to the writer the other day that dredging had become systemized to such an extent that it has ceased to be a mining speculation, and ranks today as one of the surest and most profitable of industries. Chester F. Lee, editor of the Alaska and Northwest Mining Journal, is authority for the statement that safe and gain-yielding opportunities now are available in connection with the dredging business in Alaska. A good deal has been written about the auriferous gravel deposits of the Seward and Kenai Peninsulas, but little is really known as to the actual values recovered, for often the owner of a property, after he has satisfied himself of its value, is afraid to impart the information to his neighbor, possibly because he may intend to later acquire by purchase the adjoining ground. Therefore, whether his holding be such as can best be worked by hand, by hydraulic process or dredging, often is hard to find out. This also is true in reference to dredging companies operating in Alaska, and though hundreds of thousands are annually expended for dredging equipment, no apparent reason exists for such expenditures to the outsider seeking an opportunity of investment. The result is that thousands of acres of ground that would return handsome dividends lie idle year after year, and the natural timidity of the uninformed investor makes him seek investments that will return him but six or eight per cent per annum instead of far more substantial dividends.

In the matter of dredging in California, where the industry has become a settled line of enterprise, dredging is yielding these larger returns, although the gravel there will not average over seventeen cents per yard.

For instance, it is shown that a man living in Seattle invested in a dredging company operating in Oroville, California, and although the value of the gravel worked is but 13.6 cents per yard, he has received regular dividends of 5 per cent a month on his investments. Dredging investments in California are good, but compare the value of

13.6 cents worked by this Oroville company, with the values prevailing in Alaska, as evidenced by the reports of the Geological Survey bulletin, and it will be seen that the average runs from $1 to $2 a yard. This value would pay at the rate of from 30 to 40 per cent a month, and we know that several cases are on record far exceeding this amount.

It is noted that the cost of labor, in Alaska, including board, "is from $7 to $8.50 per day; therefore labor is prohibitive for working gravel that will not pay over $3.50 per yard, as the average amount of gravel that can be picked, shoveled, and sluiced by the average man, who has to take care of seepage water, is about two and one-half yards per day. The result is that these immense deposits of comparatively low-grade gravel must await the coming of the gold dredges, before they can be made to pay. The values of this low-grade gravel, although prohibitive to the man with pick and shovel, returns to the man who has the courage and foresight to invest in dredge construction, very large profits, for the reason that most of these dredges are operated with a crew of three or four men, who at a cost of $25 to $30 for power, handle, with the average size dredge, 1,800 to 2,200 yards of material per day, while to handle the same amount of gravel with pick and shovel would require a thousand men."

An excellent authority says that "the average price of gold dredges used in Alaska is $60,000 to $80,000, installed and ready for work. This varies some with the location and means of transportation of machinery and lumber, roads often having to be built especially to get the machine on the ground. The rivers are of little account as a means of transportation, being shallow, and there are many sandbars to be encountered. But when once the machine is installed on ground that has been thoroughly tested by drilling or shafts sunk to bed-rock, and the average values proven satisfactory, the expenses are at an end and the output from such a plant soon covers the cost of installation and becomes a constant source of income."

During the experimental period of these dredges they could not be relied upon with any great degree of certainty, but, in this age of their application, they operate with the regularity of a clock. True, the heavy construction, owing to difficulties of transportation, has in many cases held back these machines from a more general installation, but this now is being overcome, in some measure, by the adoption of lighter construction, which, while not reducing the capacity of the plant, greatly has reduced the costs of transporting the device. Touching this matter, the Alaska and Northwest Mining Journal says:

"Lumber, too, is an item of considerable magnitude when it comes to hauling and freighting, requiring for a small sized machine about 160,000 feet, a great deal of which is long heavy timber. This feature, too, has also engaged the attention of engineers, and hulls of sectional construction have been built and found to fill all requirements, the advantage being the saving in cost of transportation by the use of short timber and steel, which also reduces the weight thirty-five per cent. It is what may be termed semi-steel construction, and while costing no more to build, its decreased weight reduces freight charges in proportion.

"There are drawbacks to continual operations, in some instances, owing to the fact that several machines were installed on small creeks whose area could furnish ground only for a run of four or five seasons, and when this was worked out the dredges have laid idle for a year or two, the expense and time required to move to another suitable piece of ground or of tearing down and rebuilding, making it almost as great an undertaking as the first installation. In the style of hulls above referred to, these troubles promise to be reduced to the minimum, as the dredge can be dismantled and moved by any ordinary teaming outfit to any place without the destruction of the hull or any other part of the frame work. The plan has already been put to practical demon-

strations, one in the case of a machine carrying a 10 foot bucket line and in another case a 3 foot bucket line, and it seems applicable to all styles and makes of standard machines."

A gentleman representing interests of a local character in Alaska, who has had more to do with the rebuilding, hauling and transportation of dredges and dredge equipment than any other man in Alaska, while in conversation with the writer, said: "It seems to me that such manner of construction would be advantageous in that section, and I am confident that it would mean a saving of many thousands of dollars to the companies that have already installed dredges at Nome that have worked out their ground and now contemplate moving to other ground, providing the cost of haulage was not prohibitive, which this manner of construction would overcome."

It is certain that this system of construction will be a great advantage to the dredging interests of Alaska, as an investment that previously had an earning power of from five to six years, will be prolonged to fifteen or twenty years.

But the greatest problem to be solved on behalf of the Alaska dredging business is that of bringing together this business and the required capital, faith and push to carry it to profitable measures of progress. Alaska has an abundance of rich dredging ground, and those who have discovered and proved its value are waiting the advance of capital to relieve them. The thing now is to bring these dredge-placer grounds, with their owners, and small capitalists from the outside world, together. Here is a definite, a specific opportunity,—one which is large enough to employ capital, ranging in sums from $50,000 to $5,000,000 up to hundreds of millions—one

which, with good management, will pay a profit of 100 per cent, annually, on all the money devoted to it.

Moreover, this particular industry may be counted on to continue, with increasing volume, for at least half a century. It comprises that feature of the placer gold industry which is the most abiding. The matter of frozen ground is not considered to any extent by dredge operators there, the river and creek beds being practically free from frost except possibly, in early spring, for a week or two.

"The running season in the north for these machines used to be considered one hundred to one hundred and fifty days, while the last season, with thawer and heaters, the running time was extended from March 30 to December 26, giving a run of nearly nine months. Our running period may soon equal as many days as a machine will actually operate in California, with the extra advantage that is afforded by the long days of continuous sunshine during the summer months."

Gov. J. F. A. Strong, when last in Seattle, said: "Dredging has been an unqualified success since the first dredge was taken into Alaska. There are about 50 dredges working on the Seward Peninsula, and Seward Peninsula will be yielding gold fifty years hence by means of dredges," and so say we all.

It is probable that the vast district known as the Kenai Peninsula, with Seward as its rising metropolis, will become the scene of extensive and profitable dredging operations in the near future. The formation of the region is composed chiefly of slates and diorites. Gold is the only mineral which appears to be found in commercial quantities, although there are traces of many other kinds of metals, such as copper, antimony, and lead. The veins are mostly of the true fissure type

although there are some stringer lodes and mineralized dikes. The veins dip at angles ranging from 45 to 90 degrees. The ore appears in a gangue of quartz and is free milling.

"The first great rush into the Cook Inlet country, or the northern part of the peninsula, occurred in 1896, when some very fair placer prospects were discovered and the towns of Hope and Sunrise founded. The great rush to the Klondike occurred the following year, and the country was almost deserted, but nevertheless an immense amount of gold has been taken out of the placers of this section. The richest of these placers have now been worked out and placer mining is now confined to hydraulicing and dredging. The Kenai Peninsula contains vast areas of dredging ground and some deals are now practically consummated that will result the coming season in opening up parts of these rich gravels. Professor Parker, formerly professor of mining of the University of Columbia, is at the head of a company of Eastern capitalists who intend to operate here this year. Professor Parker has taken up the options which he secured here in 1913. He spent the past season with a force of men prospecting this ground thoroughly. The large interests which are back of the heavy developments at Juneau are also looking to this field for an extension of their activities."

In the minds of those at all familiar with the resources of the Kenai Peninsula, there is not the least doubt that this section is due for a tremendous impetus both in quartz as well as dredging, as this section contains some of the finest dredging ground in Alaska. Seward is also regarded as the natural distributing point for the coal from the Matanuska fields.

The near future in all probability will demonstrate that gold mining in Alaska will assume a new beginning in 1915, both as to the dredging features of the placer

industries and as to lode developments. Moreover, pick-shovel-pan mining has not yet had its greatest period of production. That new discoveries during the next two years will astonish the whole country is the belief of the writer. These will cover both placers and lodes, and reach out to include other metals, as well as oil, phosphates, lime, marble and other valuable resources.

CHAPTER XXIX.

SCENIC ALASKA—SOUTHEASTERN.

WONDERS OF THE NEW NORTHLAND—NEWNESS OF ALASKA—CLASSIFICATION OF GLACIERS—RAPTURES OF THE GENERAL VIEW—SCENIC BEAUTIES OF SOUTHEASTERN ALASKA.

TOURISTS sight-seeing in Alaska enjoy the pleasure of knowing that they are being entertained by the newest part of our world. Some portions of our continent, notably the Saratoga Springs section and the region of the Black Hills, are the oldest land formations of the earth. These places were up-lifted from the universal sea before any land appeared in what now is called Europe. Alaska is a New Addition to the Continent of North America. It rose volcanically, in fire, smoke and flame since the "Age of Man" began, and long after the more southern portions of America had been inhabited by mankind.

In the not so very long ago, a line drawn from Long Island Sound to Puget Sound set northern limits to the habitable portion of North America. Since that age, great magnetic and mountain glaciers have forged a drainage system, into the channels of which thermal water currents, in tidal regularity, over-arched by accompanying warm atmospheric waves, extending beyond these inlets and valleys, have pushed back the lower temperatures of a receding sub-arctic region, until the whole territory climatically fed by the Japan Current, has become habitable with at least vegetable, and the stronger cereal capacities up to the shores of the Arctic Ocean.

It is scarcely necessary to state that a new land, thus up-lifted from the bottom of the great ocean, and thus prepared for the abode of mankind, naturally must be adorned with many wonderful scenic attractions.

One who wields a rather graphic pen in a workshop of the Alaska Bureau of the New Seattle Chamber of Commerce, writing of one branch of this subject, says: "Alaska is a country unique in its geographical situation, unique in its climate, and unique in its physical beauties. Point Barrow, its northernmost cape, is warmer than any point in the world as far north of the equator; and its southern shores bordering the North Pacific Ocean are likewise warmer than any point in the world in similar latitudes during the winter months, as the result of the beneficent influence of the Japan Current. Norway alone can approach it in these respects, but in Norway the mountain backbone runs parallel to the coast line, and its rivers are insignificant streams, and there is no room for extensive valleys; while in Alaska the immense quadrangle is divided into three zones by lofty mountains, on more or less east and west lines, which leave between them broad plains, through which such streams as the Kuskokwim with 600 and the Yukon with over 2,000 miles of navigable waters, open up its vast interior. Norway and Sweden are the Mecca and Medina of the European tourists, in search of the picturesque and sublime, and the latter country takes its annual toll of American pilgrims on similar sights intent; but Alaska can discount anything which these countries can boast. Its mountains over-top Mount Blanc, the Jungfrau or the Matterhorn; its glaciers dwarf the Mer de Glace and its puny associates; while the fiords of the Southeastern Archipelago do not suffer by comparison with those of Norway, whose grandeur has been embalmed in its sagas, and chanted by the annual procession of sightseers; while all its beauties can be seen from the deck of ocean or river steamer without the dust and discomfort of tedious railroad travel.

"Unlike the glaciers of Switzerland and the Tyrol, which debouch on inland valleys, and give the observer but little evidence of their tremendous power and vitality, the energy of which must be left entirely to the imagination, the largest of the Alaskan glaciers, like those in Greenland which give birth to the monsters of the Atlantic, terminate on the ocean border or interior rivers, with towering fronts from two to three hundred feet in height and miles in width; fronts which are daily pushed forward by the titanic force of gravity, only to be undermined by the waves, broken down into avalanches of glittering particles or huge blocks which fall with a roar of thunder and throw the spray a hundred feet into the air.

"The charm of the glaciers is never ending. You may watch them hour by hour, and yet linger for some grander evidence of their power. Beginning as mist, kissed by the sun from southern seas; drifted by the wind to the Northland; falling as snow on the mountain tops; welded with other infinitesimal fragments into an ice unit; crawling inch by inch a few feet annually; carving the solid earth with power irresistible, only at last to be torn in a moment of agony from its associates of a thousand, or many thousand years, and sent drifting south, the plaything of the sun and the waves; only to be resolved into its primary elements—is there not tragedy in the eternal cycle, repeated through the untold eons of the world's life?"

Glaciers are of two general classes, called mountain or gravitation, and magnetic glaciers. The Alaska formations belong to the first order as a general rule. The mighty structures of fresh water ice which flow down the Atlantic, through Davis Straits and Baffins Bay, from the Arctic, are of the magnetic sort. These augment in size from the hour of their origin until they launch themselves into the ocean. They are not the accummulations of frozen salt water, in the nature of products

of ages, as many suppose. They originate on the barren rock formations inland, sometimes many miles from the coast, and, moving towards the sea, by magnetic force, turning not aside from their general course for any obstacle whatever but carrying their huge and constantly increasing bodies of fresh water ice forward, forging a channel in the solid rock, they, upon entering the sea, represent the growth of many thousands of years.

The great tracks which they leave behind, generally about three hundred feet deep, and nearly double as wide, first are called inlets, into which the tides flow, from fifteen to fifty feet in height or depth. Later, when the soil has accreted to garment their borders, they are called rivers. Their tributaries are chiseled out in the same way. The home of these magnetic glaciers, north and east of Hudson's Bay, is not mountainous. These glaciers "work" only in the darkness of night, and make the greater part of their progress in the long nights of the extended winter seasons.

The writer of these lines talked with a gentleman who camped, with others, on one of these glaciers northeast of Rose Welcome, the northern extremity of Hudson's Bay, about thirty years ago. He informed the writer that from darkness to dawn of the long night, the glacier continued to manifest a wonderful combination of magnetic sounds, in the nature of a mighty song of natural progress. He said that the entertainment was grand beyond description.

While forging their tortuous ways to the ocean, these mighty glaciers do not lift their vast forms above the surface of the rock formation, but remain on a level with it, and are first discovered by the long, deep track which they leave behind, and in which the water flows during the short summer seasons to increase their volume and weight. They are covered from view by a thin garment of pulverized rock, and their presence is detected by the smooth, level surface which they present. One stroke of an ax or pick

will reveal the solid blue ice of which they are composed. I was within a few miles of one of these mighty glaciers when in the Rose Welcome whaling ground of the New Bedford whalers, in 1884. It had advanced to within half a mile of the coast, and the geologist of our expedition in the Neptune estimated that it would enter that arm of the sea in a little less than a thousand years.

Returning to the gravitation glaciers of Alaska, we meet with a different exhibition of the wonderful processes of nature. These glaciers raise their summits above the surrounding surface, always broken, rugged and mountainous, and are plainly visible as working monuments of natural progress. One never wearies of the exhibition of power which they manifest, "against which the efforts of man are of no more avail than those of a fly against a tornado."

When one of these ice formations, or a considerable portion of one, is launched "the peace and quiet of the rock-bound fords, clad in green, with the snowy peaks of far-off mountains, gleaming through the tree tops on the sky line 300 feet above, it falls driving the water in mighty waves up the gravel slope below you, as it takes the final plunge and floats away in the narrow river. When the mist has drifted by, the dead-white face of the ice disappears. The new dress left behind glistens with the brilliancy of diamonds, and the deeper recesses of the facade gleam blue as a summer sky unflecked by clouds.

"If their winding ways are too narrow for the wings of imagination, there are sunsets among them such as no painter could ever put on canvas, veritable vortices of flame as though the world were on fire; or farther north, broad plains where the grasses ripple in the wind and the hills on the distant horizon lie like a purple haze, leaving the gazer fancy free as to what lies beyond. Even the sun is loath to leave the scene which his warmth has endowed

with life, and forsakes it only for a few minutes at midnight.

"Along the Alaska Peninsula the tourist may witness in safety the tremendous pent-up energy of the internal fires; islands raised from the bottom of the ocean one year, only to be engulfed the next, as at Bogoslof. Volcano after volcano will daily change the shore line; first Makushin, then Pogrommi, Shishaldin, Pavlof, Katmai, Sivanoski, Iliamna and Redoubt will pass in orderly succession, rising majestically from 8,000 to 10,000 feet from the ocean level, with many others of lesser altitude and notoriety. These are the crowning peaks of a mountain range which, dividing to the east, culminates in Mount McKinley, 20,000 feet high, north of Cook Inlet; and Mounts St. Elias, Fairweather and their cold virginal sisters, grim guardians of the northern shores of the Pacific. These stupendous mountain masses (a mile taller than Switzerland's champion), their feet buried under a glacier which lines the coast for more than a hundred miles, are even more impressive than the loftiest of the world's famous peaks, either in the Himalayas or the Andes; for while these rise from lofty interior plateaus, the sweep of St. Elias is from ocean to sky, with nothing to break the foreground.

"Grand as is St. Elias, it is young geologically among its compeers, and is apparently still growing. In the innermost recesses of Disenchantment Bay, the proof may be seen in sea beaches raised forty to fifty feet during the last big earthquake in 1899, the barnacles still clinging to the polished boulders; while alongside may be seen the buried forests, where the shores have sunk beneath the ocean to compensate for the uplift.

"Surely the scenic beauties of Alaska, whether they be of earth or water or of sky, are varied enough to bring enthusiasm to the lips of the most blase traveler, ranging as they do from the sylvan groves of Sitka, which could satisfy even the most timid of lovers, to broad plains which

SEWARD, ALASKA—ON THE KENAI PENINSULA
Photo by Curtis & Miller.

STREET VIEW OF VALDEZ, ALASKA
Photo by Curtis & Miller.

whisper of peaceful homes as the years go by; or from placid fiords where days drift idly by, to exhibitions of the titanic and implacable forces of nature in her most terrific moods. Vast as an empire, there can be no such thing as ennui in the everchanging panorama; distances are forgotten, and the traveler will soon begin to understand the lure of the North, that intangible something which makes the Alaskan, cramped amid the environment of civilization, repeat to himself, day by day, 'I want to go back, and I will.'"

If the reader has given no thought to the great task imposed upon one who attempts to describe the scenic beauties of Alaska, he or she is not able to sympathize with the writer in the enormity of the task of this undertaking now in hand. The data, attractive and in vast quantity and great variety is piled up to challenge skill and energy. From transportation literature in great profusion, some of it written in most elegant style, we turn to the less attractive, as well as less highly painted productions of Government reports, and to books, each of which gives a new viewpoint to lend interest to this profusion. It is impossible to master it all. Moreover, some of the productions of the transportation literature at hand are of such a high literary quality as to plainly indicate the presence of the artist's pencil. I cannot find out the names of the well-paid writers, and, therefore, am not in a position to give them due credit for these splendid writings. Nevertheless, our volume would be incomplete without them. Here is one covering a large portion of the scenic beauty of southeastern Alaska, and the main points of interest in the ocean trip from Seattle to that fair region, which gleams with literary excellence:

* A mystic country, there is to the North where the will-o'-the-wisps are at play—the sun dogs by day and the

* Probably Mrs. Alice Henson of Seattle.

ghost gleams at night; Northern lights they have named the pale specters that flit here and there in the sky. And the red midnight sun doubles back on his track, when the year-tide is full, in that land where the sunlight and shadows are wed.

A strange land it is, filled with contrast and charm. From the far frozen seas it sweeps south, many leagues, to the warm westward isles where the breath of the breeze from Japan fills the air. Silent snow-fields lie sleeping, where the foot of the fairies may have danced, but no man's foot has trod. Busy towns spring to life where restless human beings dig and scramble for gold; and the roar of blasts and din of noisy mills shatter the air, night and day. Great cold peaks lift their pallid faces against skies so blue that it seems all the color in the world must have been spilled there; painted hills of the Yukon rise, like rainbows; or the soft heavy greens of the coast slopes, with their filmy mist-mantles and rain-pearls.

Strange ice rivers are there, and quaint Indian villages tucked away in the coves; weird totems, rich baskets, old carvings in ivory and slate—crude gropings toward art by a primitive race. Strong and vast is that land, and free and untamed, with the pulse of fresh life rising high in its veins.

Newest of all the corners of the continent, last of the borders to be subdued—the scene of action for tomorrow. Yet ancient and quaint, with an old-world civilization transplanted on its shores a century and a half ago, from the days when Baranof was the "little Czar of the Pacific"; when the bells of the old California missions were cast in the foundries of Sitka, and Russian feet danced to Russian music in the castle on the hill.

Have you seen that strange land?

Many days and long weeks would be needed to travel its length. Over mountains, along mighty winding rivers,

and out again to the sea one would go. But the "panhandle" portion to the southeast is the threshold; and from here one may glimpse the Great Country—Alaska.

Leaving the south by night, the lights of Seattle on her circling hills gleam like a glittering necklace on the throat of the sea. And the steamers turn north with throbbing engines, like the pulses of eager seekers for fortune, who rushed here in mobs in the gold fever of '97.

Waking, in the morning, the green shores of Vancouver Island face the hills of the mainland across the waterway between. The salt air is fresh, and tired nerves begin to relax, under the restful hand of the sea. Sleeping and eating are the main affairs of life; and the brisk constitutionals on the hurricane deck, the pleasant "steamer friendships" occasionally formed, the dancing after the dinner hour, the walks ashore, the glimpses of the new country, give interest to the days. The "inside passage," as it is called, winds through the protected channels of the Alexander Archipelago; and the three stormy places on the voyage, where the open sea is encountered, are of a few hours' duration only, so that there is small chance of illness for an average sailor.

The country along these shores is storied territory, visited by the early navigators of the Pacific. Past Queen Charlotte Sound and the little stretch of open ocean, the hills grow more thickly timbered, little cataracts come tumbling down from the heights, and there is a sense of greenness, of unopened country, of loneliness, perhaps.

The boundary of Alaska begins at Dixon Entrance. And here, also, in the popular notion of the day, the reign of order ceases. We are told that

> "There's never a law of God or man
> Runs north of fifty-three."

KETCHIKAN, the first city of Alaska, however, seems harmless enough. It clings partly to a hillside, with the business section along the level seashore. The first port of call in Alaska is one of the newer of the towns, built up

as a center for a variety of interests. A copper district surrounds it, and there are gold prospects also. The mining settlements of Niblack, Hadley, Coppermount, Hollis, and Sulzer are all within short distances. The fishing interests are extensive, this being one of the headquarters of the halibut industry of Southeastern Alaska. One of the finest freezing and cold storage plants on the Pacific Coast is here, and there is a salmon cannery as well. In the late summer months, the spawning season, the salmon ascend the falls of this creek by thousands. A board walk follows the stream for miles into the valley, under the arching trees. The first totem poles to be seen are at the Indian village on the outskirts of the town.

Metlakahtla is an interesting example of a communal settlement. In 1887 about 800 Christian Indians of the Tsimpsean tribe, under the leadership of the Reverend William Duncan, abandoned their village in British Columbia in order to gain greater religious liberty. Settling on the body of lands known as Annette Islands, Congress later set apart this reservation for their use. A definite municipal system of government was framed, town officials elected, and a school and church founded. There is a spacious cathedral with a pipe organ. A postoffice, store, cannery and sawmill are all operated by natives. Father Duncan, the Apostle of Alaska, as he is called, has been at the head of the community.

Wrangell is the next stop, after more winding of the way and sailing past green shores and foamy cataracts. Wrangell is one of the oldest of the Alaskan towns, a military post having been established here by the United States Government at the time of the purchase of Alaska and maintained until 1887. The first gold strike of importance was in the Cassiar Country, British Columbia, and as an outfitting center for this section, Wrangell grew to comparative bigness. The original route to the interior country, also, was by way of the Stikine River, opposite Wrangell. There is a large sawmill located here, which

sends its shingles and lumber all over Alaska. And here also are some of the oldest and most interesting of the native totems. * * * Entering Wrangell Narrows the banks are so close that a stone could be thrown ashore. The water whirls and eddies, and clouds drift past in the blue. The fair days are a study in color; the sunsets at sea paint the sky with flaming splendor; orange and amethyst, greens and rich gold, deep blues and amber. Or there are pale days, with pastel tints, subdued and elusive, that make an artist long for his brush, and a writer for his pencil. The gulls go softly along with the steamer, with deliberate flight, dropping down into the water, or floating upward into the clouds.

Petersburg is a fishing town, and the headquarters for a "mosquito fleet" that brings in halibut in the winter and salmon in the summer. A cannery and several salteries are located here.

Taku Inlet and the glacier of the same name are reached after a run through Frederick Sound and Stevens Passage, along the length of Admiralty Island. There are two of the ice-rivers, really, almost side by side—splendid examples of the "dead" and "live" glaciers. The one to the left, gray, dingy, receding, with the great terminal moraine between it and the sea; the live glacier, bright sparkling and blue, a great wall of ice jutting over the water from which huge icebergs come tumbling with a crash like thunder, splashing the water high in air and filling the channel with fantastic shapes. The Indians have woven legends about it, and call it Sitth Klummu Gutta, the Spirit's home.

Juneau, the capital of Alaska, is a few hours' steaming from here; a pretty little town, at the foot of a towering mountain. There are some fine curio shops, a somewhat imposing capitol building, attractive homes and public structures. Silver Bow Basin, back of town, is one of the most beautiful of mountain canyons in Alaska, and is the scene of extensive mining operations. Juneau has good

schools, a substantial business foundation, and is gay socially.

Douglas, the residence portion of the great Treadwell mines, is just across Gastineaux Channel and connected by telephone and ferry. It is a progressive and growing Alaskan town, whose birth dates from the discovery of placer gold on the island by "French Pete" (Pierre Erussard), twenty-five years ago.

Treadwell is announced by the big scarlet oil tanks and rows of red cottages rising from the shores of Douglas Island. Here is the largest gold mine in the world as to tonnage; and as to output, the second largest in the United States. This one mine alone has more than three times paid the purchase price of all Alaska. The yawning pits, or "Glory Hole," the heavy blasting, the mills grinding away night and day the year round, are all of interest. The town is not incorporated, the site being the property of the operating company. There are wharves, foundries, and machine shops. A large club house with reading rooms, baths, billiard rooms, bowling alleys, swimming tank, and stage for theatricals provides recreation for employes. There is a glimpse of Davidson Glacier, on Lynn Canal, in passing.

Haines, from where started the once famous Dalton trail to the interior, before the Skagway trail was opened, comes next. The territory of the Chilkat and Chilkoot tribes lies back of here.

Fort Wm. H. Seward, just adjoining, has one of the most picturesque situations imaginable, and is the military headquarters for Southeastern Alaska.

Skagway, at the head of Lynn Canal, has various claims to interest: Historically, as the boom town that sprang to life in a night with the route over the White Pass, and as the scene of operations of the notorious "Soapy Smith" gang of desperadoes. Geographically, it is the gateway to the Yukon country, and during the summer months is filled with travellers. There are numerous

hotels, curio shops, and some fine gardens. Deserted Dyea is near by; and Mount Dewey just back, for the climbers. The wonderful railroad trip over the White Pass & Yukon Railroad to the summit of the White Pass follows the old trail to the Klondike, and winds up to dizzy heights on the way. White Horse, on the Yukon River, is the terminus, and from here the steamers leave for Dawson, Fairbanks and St. Michael, 2,000 miles down stream on Bering Sea.

And a thousand miles from Seattle does the traveller find himself in these four days sailing along the shores of the "Great Country." And before him open many ways and many wide miles more.

SITKA, the quaintest of quaint old towns and the culmination of the tour is still to be seen when the steamer turns south.

Tucked away on the seaward side of Baranof Island, back of a hundred low islands, with the snowy outline of Mt. Edgecumbe looming like a dream, the ancient trading post lies wrapped in memories of by-gone days.

The old moss-covered warehouse is there still, where piles of priceless sable, ermine and beaver were stored; the old blockhouse and the Greek Cathedral of St. Michael, with its famous Madonna, its store of rich vestments and ornament. Lovers' Lane, the beautiful Indian River road, winds along by the sea, at the edge of the forest, with the gay totem poles flashing out here and there, or crumbling old war canoes. The Sitka Industrial School, the Sheldon Jackson Museum, the agricultural experiment station have more practical interest. There are some splendid hot springs at Sanitarium, near by; a post of the United States Marine Corps, as a military touch. And there are mines in the country surrounding, to give Sitka a future as well as a past.

So, like the shifting pictures of a panorama, the scenes of the changing days in the far country flash upon the memory, when the traveller has reached his home.

CHAPTER XXX.

SCENIC GRANDEUR—SOUTHWESTERN.

THE PRINCE WILLIAM SOUND SCENERY—ITS WONDERFUL MAGNIFICENCE—CHILDS AND MILES GLACIERS—THE MUIR GLACIER—MALASPINA GLACIER—MT. ST. ELIAS—LAKE MCKINLEY AND LAKE EYAK—MT. MCKINLEY—CORDOVA AND SEWARD.

IF the "inside trip" to Alaska and journeys through the southeastern portion of the great Territory are filled with scenic interest, the longer tours to the southwestern and western portions of the country include the still more inspiring grandeur of Malaspina Glacier, Mt. St. Elias, Icy Straits and the Prince William Sound and Copper River regions. Taking the ocean route into the Gulf of Alaska, through Icy Straits, one beholds the Muir Glacier. All round are lofty snow-wrapped peaks. In strange contrast can be seen in the foreground highly colored wild flowers, and, here and there, luscious berries growing among the unfriendly bergs.

Out from this ice-studded wonder of the world's waters —on between the towering heights that line Cross Sound, the vessel steams into the Pacific and turns northwestward for a run across the great Gulf of Alaska to Prince William Sound. The air is balmy, the view inspiring. Far away to the north the mountain-walled coast rises to the sight. As pearly white as if it were a stupendous uplift of pure marble, the incomparable range stretches its snowy length hundreds of miles against the deep blue of the Alaskan sky. Mt. Fairweather, the giant of its group, is left be-

hind. Ahead looms the gigantic bulk of old St. Elias, standing in unrivaled majesty high above its related peaks.

In these far northern waters, the traveller restfully reclining on deck in the warm sunshine, his eyes dreamily lifted to the kindly sky, might fancy a nearness to the tropics; but looking across northward to those towering sentinels robed in snow and ice, he knows that not far beyond the shore they guard is the circle of the Arctic. Stretched at his right may be a tourist distinguished in some highly developed corner of the earth, at his left some adventurous prospector returning to wilds beyond the walled coast line. The tourist is sensitive to the rare charms of sea and shore, but the vision of the miner, disregarding this scenic opulence, goes to rugged regions beyond, where he sees value not in the massive grandeur of formations, but in infinitesimal particles imbedded in their veins. And tourist and miner will rival one another in expressions of admiration for Alaska, as it appears to each.

The ship ploughs on through waters of ever-changing hue, past heights that are forever white. Whales come blowing to the surface to sport upon the waves or to engage other marine monsters in fierce combat; and herds of roly-poly porpoises go tumbling past. The headland that marks the way to Prince William Sound rises into view. Soon is well-defined the gateway to that vast marine enclosure which calmly awaits its great maritime destiny. The westering sun, gleaming across the wide passage from sound to sea, lights the billowing waters with a flood of color, and the vessel is riding in an element that now is violet, now carmine, now gold.

Entering the sound, the steamer turns to the eastward and in a few hours is in the beautiful harbor of Cordova. Here, on a picturesque site, is rising a most interesting city, enjoying the fortunate combination of deep water and easy access to the great interior. Sheltered by forest and mountain, its air has the softness of a Puget Sound atmos-

phere. But back of it, seaming the mountain sides, are great glacial masses. Fifty miles away are two of the earth's icy marvels, Childs and Miles Glaciers, which tourists are able to reach comfortably over the Copper River & Northwestern Railway, the trip affording an opportunity to see how, in the construction of this remarkable road, extraordinary difficulties were met and overcome. The railway makes one of its numerous crossings of the Copper River between the famous glaciers, and through unexpected foliage and flowers a few steps from the train brings one into close view of a most stupendous spectacle. Along the river's edge for three miles, Childs Glacier lifts its colossal face three hundred feet high. From a point back in the mountains, seventy-five miles away, its gigantic body winds along slope and chasm, ever accumulating in the range and ever losing at the river, where riven tons at frequent intervals crash down to spot the water with floes.

Leaving Cordova, the route lies across the Sound to Valdez Basin, a course that inspires in the lover of nature admiration and awe. Ahead is a range arrayed in that snowy whiteness with which the traveller is now familiar. But to starboard in stately succession come into view tremendous rocks, whose castellated tops may be wreathed in snow, but whose precipitous sides exhibit the grim aspect of their native grayness. From frowning crag and dark forest depth—from shadowy inlet and the wide, empty level of the surrounding water—there comes upon the beholder a sense of great solitude—of silence infinite, primeval, mystical. Out of this wondrous silence, banishing its spell, may come the beating of a launch—the white man's canoe—bearing bold prospectors and their grub to some hoped-for bonanza, and the imagination is diverted to play upon their fate.

Rugged nature's pinnacled pageantry of stone and ice passes in solemn show and gives way to the smiling sward that clothes the gentle slopes about the mining camp of

Ellamar. Out of the camp's rippling inlet the boat steers for the entrance to Valdez Bay. So far as the eye may tell there is only a mountain wall ahead. But presently the veering of the vessel brings into view a stately entrance to a noble scene. Beyond is the broad Bay of Valdez, encompassed by scenic charm. The slopes of lofty mountains that surround it with picturesque endowment of form and aspect are invested with a striking beauty lent by the blending of variegated vegetation and serried snowdrift, everlasting strata and fleeting cloudlet, forest and cascade. The steamer stops at Fort Liscum, and the whole garrison is at the wharf to enjoy a break in the monotony of post life. Three miles beyond comes Valdez, with its unique glacial background and big mining possibilities—the farthest north point touched on this voyage.

Out into the broad Sound again, and on southwestward, goes the boat to Latouche, where interest may be divided between its mining operations and its rare ferns. And then, after an exhilarating ride in protected channels and on open water, past scenes of wild grandeur and patches of gentle landscape, and finally through a magnificent avenue of the sea to a sheltered haven, Seward is reached and the outward voyage is ended. Backed by beetling heights and fronted by its tranquil bay, Seward's situation is an attractive one, and its resources are an inspiration to its builders.

Scenic Travel.—Those unacquainted with "Modern Alaska" will be surprised to read of railway scenic travel in that great region. The Copper River Valley route already provides one of the greatest of these enjoyments. This was made possible by the completion of the Copper River & Northwestern Railway, in the summer of 1911, from Cordova, on the south coast, to Kennecott, towards the interior, a distance of nearly 200 miles. The road, since that time, has not been continuously operated, owing to drawbacks incident to faulty governmental administration

of the country, but, doubtless will resume activity and push its line forward to Fairbanks, under the new order, without delay.

Aside from its importance in relation to the industrial development of the country in the future, the Copper River route already has taken precedence as the most remarkable scenic line to be found in the world. Here we have the mountains and glaciers eclipsing in grandeur those of far-famed Switzerland; the canyons, gorges and peaks of Colorado are as nothing compared with those of the Copper River; Lake McKinley, Lake Eyak and Long Lake combine more majestic scenery than either Tahoe or Crater. Touring above this picturesque arena, combining all that is sublime in mountain and marine scenery, arise in the distance three great monuments—Mt. McKinley, the highest peak in the United States; Mt. Wrangell, in active eruption for several years past, and Mt. St. Elias, the most picturesque of any American mountain. Like sentinels they stand at three points of a triangle, guarding the treasures that lie in the hills and valleys at their base. From their towering slopes trickle countless streams of snow and water, each one of which steadily and gradually increases in volume until it forms an important river. Many of these rivers flow into the Copper, and this stream for nearly 200 miles rushes down the natural defile to seek its water level at the Pacific Ocean.

From Cordova the tourist may proceed to Childs and Miles Glaciers. This trip of forty-nine miles is made in a short time, and on the return, one can proceed to Seward and Valdez. The trip affords opportunity of viewing some of the most beautiful scenery of the Copper River, notably Childs and Miles Glaciers, located on either side of the Copper River at Mile Post 49, where the river is spanned by a mammoth steel bridge set on concrete piers, and one of the notable bits of construction on this new railroad. Owing to its accessibility, Childs Glacier is the one visited most frequently. Leaving the train, a short walk of but

a few thousand feet takes the tourist to the bank of the river, facing Childs Glacier in all its majesty and splendor. Imagine, if you can, a solid wall of ice rising from an opalescent stream! It is three miles long. In height it varies from 300 to 500 feet. In color it is icy white, with great streaks of turquoise blue. As the river is rushing swiftly by, constant detonations and reports are heard and great masses of ice detach themselves from the glacier and fall into the stream, causing waves to be sent whirling and swirling across the stream and rushing up the bank to the feet of those standing on the opposite shore. It is a sight most beautiful and fills everyone with awe, as the masses of breaking ice are sometimes as large as a modern skyscraper in any of the large cities. Throughout the summer months the glacier is steadily moving forward with a constant booming of falling ice, both day and night, and the view of this remarkable ice wall, once seen, will never be forgotten.

Cordova, the seaport, is located on Cordova Bay, a landlocked harbor and one of the finest ports in Southwestern Alaska. It has good hotels, banks and mercantile establishments and is, therefore, becoming the outfitting headquarters for prospecting and hunting parties going into the interior. A stop-over at Cordova can be made very interesting, owing to the many novel sights and scenes other than the glaciers just described; while the nearby country is most inviting to the hunter or fisherman. The new railroad is one of the natural gateways to all the interior of Alaska, and at Mile Post 192 a hunting lodge is likely to be established where experienced guides with horses and all equipment can be procured for the trip into the White River country. The White River district is full of game, and with the Copper River region the two create a most inviting field for the sportsman. Fishing is good; while bear and mountain sheep are plentiful.

Chitina is the junction town, 135 miles from Cordova. Here the Chitina branch leaves for Kennecott and connec-

tion is made with stages for Fairbanks via the new government stage road. Chitina is the outfitting point for that entire section and is being rapidly built up. Many prospectors are making it their headquarters and spreading out into the surrounding country. There are many thousands of acres of bottom and bench land in the Chitina Basin undoubtedly suitable for agriculture. The climate is most favorable and the soil rich. The entire basin is well watered and timbered. The chief crops will be potatoes, oats, hay and other grasses and vegetables, and as the country develops a ready market will be found for all these products of the soil. In this future industry the town of Chitina has a valuable asset, as no agricultural land can be developed in the Copper River Valley south of the Chitina River.

The railroad crosses the Copper River at Chitina and continues through a heavily wooded country, at times affording splendid views of the entire frontal range to Kennecott, the present terminus, 195.6 miles from Cordova. Here is located quite a thriving hamlet built up entirely by the Kennecott Mines Company, operating the Bonanza mine. It is a noteworthy copper property, some of its ore shipped last year running as high as 70 per cent. The mine is reached by a tramway from the mill and ore house, and the company has erected substantial buildings for its staff, officials and employes.

Other scenic features are described in connection with accounts of the railway and highway routes elsewhere in this volume.

CHAPTER XXXI.

LAND OF THE SPORTSMAN.

Big and Little Game of Alaska.

IT is well said that no portion of the North American continent presents such an attractive field for the sportsman as Alaska. Largely due to the fact that the Territory has heretofore been regarded as an isolated and inaccessible region, the game laws misunderstood and the general climatic conditions exaggerated in a manner to discourage hunters and fishermen, the country has been visited by but few for these sports. But conditions are changing, and the ease with which the country, even to its interior parts, will be reached from Seattle, owing to new railway lines soon to be opened, gives us a new picture which strongly will appeal to the lovers of all large and small game sports.

The reader of this description of the country should remember that the Territory is so vast that conditions greatly differ as between locations. Another matter may be referred to and that is the provisions of the game laws in reference to registered guides. The only place where a registered guide is compulsory is on the Kenai Peninsula and such registered guides are not required for the White River country, Kodiak Island, the Copper River region, or any portion of Southeastern or Western Alaska.

However, any non-resident hunter in Alaska shall pay a fee of $50 provided he is a citizen of the United States, and a fee of $100, if he be an alien; such license to be pro

cured from the Governor of Alaska, whose address is Juneau, Alaska.

The Kenai Peninsula presents an excellent field for the sportsman.

A somewhat distinct feature will be hunting in the White River country. This section is located in Central Eastern Alaska, extending to the international boundary and beyond. It very soon will be conveniently accessible. It is described as the "Sportsman's Paradise."

Mention must be made of the Bering Sea big game. Here are to be found hundreds of walrus, while the polar bear, that fierce prowler of the North, can be encountered quite frequently. The musk ox also is native to this section, but is not plentiful. But to the hunter of big game no animal appeals more strongly than the great Kodiak brown bear. The range of this animal is on Kodiak Island, Kenai Peninsula and Alaska Peninsula, and the proper season is the month of June. The pelts are good up to July 1st, when the season closes. Each sportsman is allowed three bears and no more. It should be borne in mind that hunting for bear must be done before July 1st, but moose, mountain sheep and mountain goat after August 20th.

The cinnamon or brown bear is found not only in the wooded sections, but also in the barrens and on the bare rocky mountain sides. Its range covers the greater part of Alaska from Mt. St. Elias to the Endicott Mountains. This animal has a well established reputation for ferocity, second only to the Kodiak bear.

On the Malaspina and other large glaciers in the vicinity of Mt. St. Elias is to be found the splendid specimen known as the glacier bear. It is about the size of the ordinary black bear, its shoulders being higher than its hips. It has a short neck and no hump on its shoulders. These bears are a bluish gray in color, somewhat resembling the color of the glaciers. The pelt is fine and makes an attractive rug. It weighs from 300 to 600 pounds.

BIG GAME KILLED ON ADMIRALTY ISLAND

ESKIMO MOTHERS AND CHILDREN

Photo by F. H. Nowell.

The moose is the largest herbivorous animal in Alaska. Its range extends from the Kenai Peninsula northward to the Kuskokwim River and eastward to the Tanana and White Rivers. Cook Inlet and the Kenai Peninsula are the best places for moose hunting. The record length of the antlers of this animal is 78 inches. Cook Inlet moose are the largest in the world, and the antlers a trophy well worth possessing.

Mountain sheep are found in great numbers in the higher altitudes of Central Alaska. They may also be found in the Endicott Mountains in Northern Alaska, in the White River section, and the Chisana country.

Wild goats are to be met with in all the mountain regions of Alaska. The sportsman does not have to go further than Southeastern Alaska to obtain the fill of his ambition as a goat hunter.

There are thousands of caribou in Alaska, and they may be met with in season in a region extending from the head of the Tanana to the Arctic. Prospectors in the Chandelar and Porcupine regions as well as at various places back of Skagway report caribou in large numbers. Big timber wolves occasionally are met with in the timbered sections of this country and the gray wolves are to be seen along the outskirts of the caribou lands. Foxes abound in every part of Alaska and their furs have been, since the discovery of Alaska by the Russians, an important article of Alaska commerce. The variety of foxes comprises the white Arctic fox, red, black and the silver-gray, the latter specimen being very rare. There are fox farms on some of the Alaska islands, where blue foxes and other varieties are grown in a half wild state.

Deer are found in abundance in the forests of Southeastern and Southern Alaska.

In addition to the big game, Alaska is well provided with small game, including the ptarmigan (Arctic grouse), spruce grouse, partridges, rabbits, porcupine, and almost every kind of water-fowl and shore bird. Alaska is the

breeding ground for countless thousands of geese, ducks, swans, cranes, plovers, snipe and other species.

There is scarcely a stream in the central and northern part of Alaska that does not contain grayling. There are five kinds of trout in that territory—Rainbow, Dolly Varden, lake, cut-throat and steel-head. Lake trout is found in the larger lakes of the interior. Still another variety of food fish is the white fish of the Yukon, which can not be taken with bait. It is also found in some of the larger streams of the Arctic coast and is equal in flavor to the Lake Superior white fish. Pike are also found in the lakes of Alaska.

As the steamships wait at Cordova for sightseers to be taken over the town or up to Childs and Miles Glaciers, many of the men go fishing. Right at the wharf nets can be hired of the "crab men" and the novelty of securing your own crab for luncheon is the result. The Cordova crab is better than the Dungeness or the Chesapeake crab.

Then right back of the town, picturesque Lake Eyak, a nice walking distance, affords splendid fishing, so Cordova is an attractive point for either hunter or fisherman.

While many of the places herein mentioned are quite a distance from Seattle, there are other sections much nearer but which provide excellent sport. All along the Southeastern Alaska coast, from Ketchikan to Skagway, fishing and hunting are excellent. These points are from two to four days' distance by steamship and include Ketchikan, Wrangell (the Stikine country), Haines, Douglas, Juneau, (Douglas Island and Admiralty Island), Skagway and interior points reached by railroad from there.

While the halibut is regarded as a commercial fish, owing to the hundreds brought from Alaska and sold all over the country for food, yet one of the most unique day's sport can be enjoyed if one goes halibut fishing. The halibut grows to be over 300 pounds at times and to hook one weighing over a hundred pounds means some hard work and rare physical exercise in landing the fish. To many, catch-

ing halibut will prove fine sport. They are hard to handle, in fact they cannot be landed alive from the line, the fisherman being compelled to kill the fish with a club before it can be hauled into the boat.

Halibut fishing is common along the greater portion of the coast of Alaska, to the south of the Territory.

The most exciting sport for the angler may be found in the salt waters of Southeastern Alaska during the salmon season. The King salmon, which is the biggest of the salmon family, will take a troll and make a fight that will give the angler a great respect for this royal member of the salmon household. Near Ketchikan, two of the species weighing 77 pounds each were caught with a troll. Ketchikan is quite a favorite summer resort for many Eastern hunters and fishermen who enjoy the season in sailing about the various islands or in making trips into the back country to the British Columbia line.

A copy of the game laws of Alaska can be procured by writing to the United States Department of Agriculture, Bureau of Biological Survey, Washington, D. C.; or to the Governor of Alaska, Juneau, Alaska.

The routes to the various hunting grounds described herein are as follows: To Bering Sea, for polar bear, walrus, musk ox, etc.; season of navigation open at Seattle from June 1st to October 1st.

To White River, Nebesna and Chisana country, steamers connect at Cordova with trains for Blackburn, where guides and horses can be procured for trips into these attractive regions. The Kenai Peninsula is reached by steamers for Seward and Kodiak Island. Steamers leaving Seattle connect at Seward with steamers for Alaska Peninsula points and Kodiak Island. The routes to Southeastern Alaska are generally well known.

Presuming that the visitor is going into the interior of Alaska and not to the Bering Sea or Arctic region, the ordinary hunting outfit such as would be used in British Columbia, or other similar mountainous districts is re-

quired. Good, strong waterproof boots, or halfboots are necessary, but it will be a mistake to overburden oneself with heavy clothing, as the substantial outfit will be found sufficient for the interior country. The Alaska game laws provide the following seasons for hunting: North of latitude 62 degrees—brown bear may be killed at any time; moose, caribou, sheep, walrus and sea lions, from August 1st to December 10th, both inclusive. South of latitude 62 degrees—moose, caribou and mountain sheep, from August 20th to December 31st, both inclusive; brown bear, from October 1st to July 1st, both inclusive; deer and mountain goats, from April 1st to February 1st, both inclusive; grouse, ptarmigan, shore birds and waterfowl, from September 1st to March 1st, both inclusive.

Deer in Southeastern Alaska may be killed August 15th to November 1st, except at certain places.

Walrus in Bering Strait and Bering Sea north of the mouth of the Kuskoquim River may be killed May 10th to July 1st, both inclusive. Polar bear may be killed at any time.

Stockholm tar (ordinary pitch tar) and lard, mixed in equal portions and spread upon the face and hands, will afford protection from mosquitoes, gnats and flies. There are many high-priced preparations on the market, but none will be found quite so effective as this simple one.

CHAPTER XXXII.

SEATTLE OF TODAY.

HISTORICAL—CLIMATE AND HEALTH—POPULATION—STRATEGIC LOCATION—COMMERCIAL ADVANTAGES—INDUSTRIES—TRANSPORTATION FACILITIES—ITS WONDERFUL PROGRESS—OTHER ATTRACTIONS.

AS the present is the beginning of a new era of progress for both Alaska and Seattle, the public naturally will observe their growth from this datum. We already have had a very full account of the Alaska of 1914. It remains only to present such information as will give the reader a clear, quick view of the status of Seattle as it is today. This follows here:

HISTORICAL

First settled in 1852.

Named for a friendly Indian chief who died in 1886.

First plat filed in 1853.

Incorporated as a town in 1865.

Incorporated as a city in 1869.

In 1884 first railroad reached the city.

June 6, 1889, business district wiped out by fire. Loss, $7,000,000.

In 1889 city charter adopted.

In 1896 first direct steamship line to Orient established.

In 1897 first big shipment of gold from Alaska and the Klondike.

CLIMATE AND HEALTH

Average temperature: Winter, 40 degrees; summer, 64 degrees.

No blizzards, cyclones, cloudbursts or drouths.

Outdoor work possible every day in the year.

Finest summer climate in America; winters invariably mild.

Lowest death rate in the United States.

Lowest infant death rate in the world.

Absolutely pure water supply from mountains; 67,500,000 gallons daily capacity.

Rigid inspection of milk and all market supplies.

City collects and destroys all garbage.

GENERAL.

Population, 1910 census, 237,194; 1914 directory and school census, 313,000.

Twenty-first city of United States in population and importance.

Eight transcontinental railroad lines.

Fifty-eight steamship lines.

One hundred and fifty miles of water frontage.

Postoffice receipts for 1912, $1,049,503.72; 1913, $1,344,248.

Bank clearings 1912, $602,430,660.99; 1913, $664,857,448.

Bank deposits 1912, $79,187,319.68; 1913, $81,578,418.

Cost of buildings in 1900, $3,000,000; in 1909, $19,000,000; in 1910, 1911, 1912, $33,000,000.

United States Assay Office, established 1898, has received $210,407,068.99 in gold.

Best lighted city in America; lighted by municipal plant.

More than three hundred churches of all denominations.

Public library of 175,000 volumes. Splendid central building and six substantial branch buildings.

Sixty-five grade schools; six high schools. Many private and parochial schools.

University of Washington within city limits on 335-acre campus, with 2,700 students enrolled.

Public park acreage 1,803; twenty-eight improved parks; twelve fully equipped playgrounds.

Finest scenic boulevard system in world; thirty-one miles completed.

Expenditures on parks, playgrounds and boulevards since 1904, $5,440,000.

Building largest canal lock in United States to connect salt and fresh water harbors at cost of $2,300,000.

Money provided and work in progress on harbor improvements to cost, within next five years, $20,000,000.

More commerce, more manufacturing, more railroads, more population than any other city in Pacific Northwest.

Seattle pride largely is invested in its many grand office buildings, foremost among which is the wonderful 42-story L. C. Smith temple of business, probably the finest office building west of New York City. It is a distinguishing feature of the central business district of Seattle.

It is well said that the history of Seattle's past is a record of the struggle of the supremacy which has been realized. "It is a city whose future is pregnant with promise," and this promise has become much brighter since the National Government has given its people assurance of the early development of the great resources of Alaska. As all now realize, Seattle has a most wonderfully strategic position in the Pacific Northwest. In the commerce of the nation and the world it ever will hold a first place. "It is the door to a continent richer in diversified resources than any other." This is a gateway also to foreign lands and to their progress. It is the natural western distributing point for American products—a port where ocean liners and transcontinental trains meet to expedite the world's business.

Concerning the advantages of its location, it has properly been said that it is situated on an eminence commanding a vast waterway, where its wonderful growth has been wisely and well directed. The place chosen for the city comprehends the rugged hillsides bordering Elliott Bay, an

arm of Puget Sound. These heights were picturesque, but were obstacles to rapid transit; hence they were leveled. Gravel and boulder and rock were removed, and comparatively level streets were secured. The refuse was appropriated to raise the level of extensive tide flats, and to reclaim them for manufacturing and terminal sites.

In this work large expenditures were necessary, but the rapidity of growth in population and business warranted the outlay. The village of 1880 grew into a city of 80,671 in 1900, while in 1910 the population was 237,194, an increase of 194 per cent in ten years. The 1912 census gives the city 286,322 inhabitants, and that of 1914, by one authority, estimated, places the number at 313,000.

Here are some figures indicative of Seattle's business growth: In 1901, the bank deposits were $20,237,862; in 1912 they were $79,187,319; in 1913 they were $81,578,418.

Bank clearings, 1901, $144,694,367; in 1913, $664,857,448. Postoffice receipts, 1901, $228,437; 1913, $1,344,248. Building permits, value, 1901, $4,569,728; 1909, $19,044,335; 1910, $17,418,078; 1911, $7,491,156; 1913, $9,321,115. Total value building in four years, $53,274,714.

The latest government manufacturing census was taken in 1909. This gives capital invested as $46,472,000, and the value of the manufactured product at $50,569,000. Seattle and the State of Washington have more factories than any other city or state in the Pacific Northwest.

Located on the shore of Elliott Bay, an arm of Puget Sound, which forms an extensive deep water harbor, perfectly protected from storm and accessible to the largest vessels afloat at all times and at all stages of the tide, Seattle has become the American port of a number of the principal steamship lines operating upon the Pacific Ocean, and the home port of some of the greatest freight carriers in the world. It is also the home port of a very large fleet of coastwise steamers which are operated in its trade with Alaska, Oregon and California. The city is located on the east side of Puget Sound, 125 miles from the ocean.

In the way of railroad transportation, Seattle is especially favored. The lines entering the city are the Oregon-Washington Railroad and Navigation Company, one of the related lines of the Harriman System, giving direct connection with the Southern Pacific, Union Pacific and Oregon Short Line; the Great Northern, Northern Pacific, Chicago, Milwaukee and St. Paul, Canadian Pacific, and the Burlington. The Grand Trunk Pacific connects with the city by its own line of steamers. Terminal facilities are ample. The O.-W. R. & N. station at Seattle is the finest structure of its kind in the United States west of Chicago.

In addition to the extensive terminals installed in Seattle, by the transcontinental railroads, the Port District voted in March, 1912, $8,100,000 for the construction of dockage facilities, including $5,000,000 for the acquisition of the site and erection of six concrete wharfs, 1,400 feet long and 150 feet wide. The terminal facilities are to be similar to the Bush Terminals in Brooklyn. In June, 1912, the Pacific Terminal Company submitted a proposal for a lease of the Harbor Island Railway and deep sea terminals, agreeing to expend $6,000,000 in the construction of piers, warehouses, industrial buildings, terminal railroad facilities, etc.

Seattle and King County, assisted by the Government, are now constructing a waterway, connecting Puget Sound with Lake Union, a fresh water body about five miles square in the heart of the city, and Lake Washington, some thirty miles long by five miles wide, forming the east boundary of Seattle. This work will create the most magnificent land-locked fresh water harbor in existence. The concrete lock to be installed by the Government in the canal will cost $2,275,000 and will be second largest in the country. There will be ample dockage facilities in both lakes with the rail accommodations necessary for industrial concerns. Completion of the canal will increase Se-

attle's water front from fourteen to one hundred and forty miles.

The leading industries of Seattle are shipyards, saw mills, shingle mills, flour, feed and cereal mills, brick yards, terra cotta works, foundries, machine shops, breweries, factories for the manufacture of sash, doors, blinds, woodenware, excelsior, barrels, boats, shoes, clothing, cars, wagons, carriages, furniture, tinware, soap, crackers, candy, pickles, brooms, baking powder, drugs, jewelry, saws, fish nets, woollen goods, trunks, stoves and numerous household commodities and food products. Seattle is becoming an important industrial center. There are splendid sites, cheap power and abundance of raw material here for manufacture.

Coal mining is one of the leading industries of the State of Washington. The coal fields extend over an area of several thousand square miles. All of the large mines, except those of the Roslyn district, are located within fifty miles of Seattle, and the Roslyn district is less than 100 miles distant on a direct line. Washington and British Columbia are the principal sources of supply for all the coal used on the Pacific slope. The output of the Washington mines is from 3,500,000 to 4,000,000 tons per annum.

The fisheries of Puget Sound have assumed vast proportions. Washington leads all other states in the value of this industry. More than $4,000,000 in wages is paid out annually and the value of the output runs from $10,000,000 to $15,000,000 per year. In addition to its home fisheries, Seattle is the headquarters and base of supplies for a large number of leading companies engaged in the salmon packing industries of Alaska and other places. In addition to salmon, the fisheries include halibut, cod, smelt, herring, oysters, clams and crabs. The cod fisheries of Alaska grow in importance yearly, and much of the product is cured and marketed here. Sealing and whaling add largely to the value of this industry.

Western Washington includes large areas devoted to general farming, stock-growing, fruit raising, dairying, poultry farming, bee keeping. Every soil occupation is engaged in successfully. Diversified farming is being more generally engaged in. Dairying is one of the recognized profitable industries, and it is conceded that there is no better dairy country in the world.

The city owns its water system. The supply is brought from Cedar River, in the foothills of the Cascade Mountains, a distance of twenty-eight miles, by gravitation. The water is soft and pure. The daily capacity of the plant is 65,000,000 gallons. Reservoirs and stand pipes have a capacity of 272,000,000 gallons. Average daily consumption, 30,000,000 gallons. In addition to furnishing consumers with water at a low price, the system is providing a source of revenue and a handsome surplus.

Seattle owns an electric light plant, which furnishes light and power for municipal and commercial purposes. It was put in operation in 1905, at an initial cost of $840,000, including the distributing station and equipment. The present plant has a valuation of $6,000,000. Bonds were voted in 1911 for the purpose of increasing water storage capacity at Cedar Lake, the source of power for the generation of the electric current. This city-owned plant, in addition to furnishing light and power, acts as a regulator for prices charged for electricity by private corporations. There is available at present about 250,000 horse power. Seattle claims to have the cheapest manufacturing power of any city in the United States.

The people of Seattle take great pride in the extensive parks and play grounds of the city. Twenty-eight parks are improved and opened, twelve fully equipped play grounds are in operation, and thirty-one miles of scenic boulevard within the city are open to traffic. The Park Board has under its jurisdiction an area of 1,803 acres and

is constructing a boulevard system which when completed will be fifty miles in extent, following the lakes, the Sound, reaching numerous sightly elevations and practically encircling the city.

Seattle's public schools rank among the best in the United States. The teaching force has been carefully chosen. Thoroughness and excellence are established in the sixty-one grade and six high school buildings in the city. The present enrollment is 32,445.

The University of Washington is located here on a commanding site of 355 acres, lying between Lake Union and Lake Washington. The attendance in 1912 was over 2,500. The university is free to the youth of the State, and is provided with every facility for imparting a liberal education. Some of the buildings on the grounds were built for the A.-Y.-P. Exposition and subsequently donated for university purposes.

Seattle has an equable climate, with no extremes of heat or cold. The summers are cool or moderately warm, and the winters are mild. There is little, if any, snow fall, except in the mountains. In the summer the temperature rarely reaches 90 degrees, and zero weather is unrecorded in the city. At Seattle, which is a fair average for Western Washington, the annual mean temperature is 51.4 degrees, ranging from 40.6 in January to 64.7 degrees in August. The average high temperature is 74 degrees in July and 70 degrees in August, and the average low temperature is 43 degrees in December and 38 degrees in January. Seattle has an annual average rainfall of 35.88 inches.

Seattle and Western Washington are noted for their healthfulness. The records of the Health Department at Seattle for a number of years show that the average annual death rate is 9.3 per thousand. Comparison will show

this is very low. The nights are cool, insuring restful sleep. Malaria and kindred diseases are unknown.

The Puget Sound Navy Yard is located just across the Sound from Seattle. It has facilities for the docking of the largest battleships. Employment is given to from 1,200 to 1,500 mechanics. Expenditures for supplies, purchased in Seattle, exceed $100,000 per month.

Fort Lawton, a U. S. Military Post, is situated within the city limits. A site of 605 acres donated to the government by the people of Seattle makes an ideal park, drill ground and garrison. Fort Lawton is to be made a full regimental post.

CHAPTER XXXIII.

SEATTLE-ALASKA TRANSPORTATION

FLEETS OPERATING IN THE COMMERCE OF PUGET SOUND—THE PRINCIPAL STEAMSHIP COMPANIES ENGAGED IN THE PUGET SOUND-ALASKA TRADE—ROUTES AND DISTANCES—IMPORTANCE OF DUTCH HARBOR AND PRINCE WILLIAM SOUND TO TRANS-PACIFIC NAVIGATION—FUTURE GROWTH OF SEATTLE COMMERCE.

THIS chapter mainly is statistical, intended, for the greater part, for ready reference use. Three words place the great subject of this volume squarely before the reader. These are *transportation, commerce* and *industry.* Industry comprehends them all, but the classification naturally is in the order just given.

As already noted, Seattle and Alaska are so closely interrelated as to be inseparable, to any great extent, in regard to these three phases of material development. In a very wide sense, Alaska is the most important factor in the future commerce of the Pacific, and Seattle is the only great Eastern Pacific gateway to Alaska. It is well known that the Government of the United States has planned the construction of more than 1,000 miles of railway in the central portion of Alaska, connecting the great valley of the Yukon with the North Pacific Ocean, and the establishment in Prince William Sound and at Dutch Harbor of great coaling stations, which can be used by the United States Navy, and which will become the chief source of fuel supply for the ships of commerce

plying between the Pacific Coast of America and the Orient.

It is noted that Dutch Harbor is 1,727 miles from Seattle, on the great circle route to the Orient. Hence, the importance of its location at once is apparent, both from the standpoint of commerce and that of the exigencies of war. It has been observed in this connection that steamships in either direction can leave ports in the Orient, or in America, with half their present coal supply, and thereby enjoy greater cargo space. This view of the subject is of particular interest to Alaska, because it presages a time, near at hand, when direct commerce between Alaska and the Orient will attain large proportions. Dutch Harbor must also become a most valuable half way house between Seattle and the Orient.

From what already has been said concerning the vast resources of Alaska, those of the Pacific Northwest, generally, and the strategic location of Seattle, both in respect to land and ocean transportation, not anything further is needed to indicate in what great measure the development of these regions will contribute to the near future wonderful growth of the commerce of the Pacific Ocean; and this growth must carry with it a greatly increased importance of these regions, commercially and financially.

In the matter of ports, as we find them today, Alaska naturally is divided into five districts. These are Southeastern Alaska, Southwestern Alaska, Alaska Peninsula, Bering Sea and Yukon River. In the first named the chief ports of call are Nettakahtla, Ketchikan, Petersburg, Wrangell, Treadwell, Douglas, Juneau, Sheep Creek, Haines and Skagway. Public wharves are maintained at most of these places. The wharves at Treadwell and Sheep Creek are owned and operated by mining companies.

The chief ports of call in the Southwestern Alaska district are Cordova, Valdez, Ellamar, Latouche and Sew-

ard, all of which have public wharves except Ellamar. At this place freight has to be lightered.

The principal ports of the Alaska Peninsula district, which includes the territory southwesterly, including the Aleutian Islands, are Knik, Iliamna, Kodiak, Afognak, Chignik, Uyak, Seldovia, Karluk, Dutch Harbor, Unalaska and others. In most cases freight must as yet be lightered at these ports.

The chief ports of the Bering Sea district are Bristol Bay, Kuskokwim Bay, Nome, St. Michael, Kotzebue Sound and other approaches. At these places freight has to be lightered, and the ports are closed from November 1 to June 1.

As noted elsewhere, the Yukon district is served by steamers to St. Michael, or to Skagway, and thence by railway and river boats. As yet there are no wharves at Nome, or St. Michael, or other Bering Sea ports, all freight and passenger business being lightered from ships at anchor.

Wonderful has been the growth of the commerce of Seattle, and this advancement of late years largely has been due to the transportation business with Alaska. It is reported that the values of the various commodities handled over the wharves of Seattle in 1913 reached a total of $124,130,854.

The principal steamship companies operating from Seattle, and Puget Sound points to Alaska, with the number of vessels owned by each, tonnage, etc., follows:

1. The Pacific-Alaska Navigation Company, Seattle, operating three steamers, 5,950 tons, between Puget Sound points and Southeastern Alaska.

2. Alaska Steamship Company, Seattle, operating thirteen steamers, 22,649 tons, between Puget Sound, Southeastern and Southwestern Alaska, and Bristol Bay and Bering Sea points, in season.

FORTY-TWO STORY L. C. SMITH BUILDING, SEATTLE

Photo copyright by Curtis & Miller. Courtesy Burns Lyman Smith.

3. Pacific Coast Steamship Company, Seattle, twelve steamers, 27,700 tons, operating between Puget Sound points, Alaska and Bering Sea.

4. Humboldt Steamship Company, Seattle, one steamer, 500 tons, operating an irregular service from Seattle to Southeastern Alaska.

5. Swan Navigation Company, one steamer, 1,100 tons, operating between Puget Sound and Southeast and Southwest Alaska.

6. Skagway Steamship Company, Puget Sound terminal, Seattle; one steamer, 2,751 tons, operating between Puget Sound and Southeast Alaska.

7. Northland Steamship Company, Puget Sound terminal, Seattle; two steamers, 1,700 tons, operating between Seattle and Southeast Alaska

8. Western Alaska Steamship Company (W. C. Dawson & Co.), Seattle, operating in season a fleet of chartered vessels between Seattle and Puget Sound points and Bering Sea ports; connecting at St. Michael with the steamers of the Northern Navigation Company to Yukon and Tanana River points.

9. Alaska Barge Company, eight barges, 14,600 tons, operating the fleet between Puget Sound and Alaska.

10. Puget Sound Tug Boat Company, Seattle, eight tugs, 971 tons, operating a fleet of ocean-going tugs, between Seattle and Alaska.

11. Northwestern Fisheries Company, Seattle, operating a fleet of seven vessels, 19,840 tons, and three tugs, 284 tons, to Alaska canneries.

It must be remembered that this list covers only the ocean transportation between Seattle and Puget Sound points and Alaska, exclusive of vessels engaged in the lumber business with the Northland. The inland transpor-

tation business of Alaska is covered in another place in this volume, under the chapter title, "The Great Yukon Valley."

In this connection it is expedient to include the following table of Seattle-Alaska route distances, which is predicated upon the "inside route," and which is compiled from Beaton's "North Pacific Ports":

SEATTLE-ALASKA ROUTE DISTANCES

Seattle to Ketchikan	657	miles
Ketchikan to Petersburg	113	"
Petersburg to Juneau	109	"
Juneau to Yakutat	246	"
Yakutat to Katalla	175	"
Katalla to Cordova	120	"
Cordova to Ellamar	58	"
Ellamar to Ft. Liscum	21	"
Ft. Liscum to Valdez	3	"
Valdez to Latouche	84	"
Valdez to Cordova	77	"
Valdez to Ellamar	24	"
Latouche to Seward	62	"
Seward to Pt. Graham	137	"
Pt. Graham to Seldovia	16	"
Seldovia to Kenai	75	"
Kenai to Knik	67	"
Seldovia to Homer	14	"
Homer to Kodiak	132	"
Seldovia to Kodiak	122	"
Knik to Kodiak	255	"
Ellamar to Landlock	22	"
Landlock to Cordova	50	"

From the same source we have the wonderful lesson of the Panama Canal in distance figures, which gives us a

comparison of the Panama and Cape Horn routes as between Seattle and the following points in America and Europe:

Seattle to—	Miles Horn Route	Miles Panama Route	Miles Distance Saved
Boston	13,876	6,200	7,676
Portland, Me.	13,907	6,244	7,663
New York	13,905	6,032	7,873
Baltimore	13,979	5,959	8,020
Philadelphia	13,952	6,004	7,948
Norfolk	13,857	5,837	8,020
Charleston	13,856	5,622	8,234
Savannah	13,888	5,621	8,267
Port Tampa	14,023	5,275	8,748
Pensacola	14,228	5,407	8,821
Mobile	14,268	5,434	8,834
New Orleans	14,321	5,453	8,868
Galveston	14,497	5,557	8,940
Liverpool	14,272	8,600	5,666
Hamburg	14,653	9,125	5,528
Antwerp	14,391	8,863	5,528
Bordeaux	14,032	8,656	5,376
Gibraltar	13,341	8,391	4,950

The second port in importance in the State of Washington is Tacoma, and this commercial city deserves attention here because it is the home of the Pacific-Alaska Navigation Company and the Alaska Coast Steamship Company. Tacoma has extensive dockage facilities and accommodates twenty steamship lines. Chief among the latter is the Pacific-Alaska Navigation Company, with executive offices in the Perkins Building, Tacoma, with H. F. Alexander, president; Chester Thorne, first vice-president, and S. A. Perkins, second vice-president. Of course the steamers

of this company do a large Seattle-Alaska business. The service is known as the Admiral Line.

The vessels of the fleet consist of the Admiral Sampson, 300 feet length, 36 feet beam, and 25 feet depth; the Admiral Farragut, the same size; the Admiral Dewey, the same size; the Admiral Schley, the same; the Admiral Watson, 263 feet length, 38 feet beam, and 25 feet depth; the Admiral Evans, the same size. The service of this line is considered of high class.

The Pacific-Alaska Navigation Company carries United States mail between Puget Sound and all ports in Alaska. Its service covers all ports from San Diego, Cal., and Kodiak, Alaska, including passenger and freight connections with all transcontinental railway lines whose terminals reach the ports covered. The California-Alaska service and the Puget Sound-Alaska service of the "Admiral Line" is accounted second to none.

The Alaska Steamship Company, with executive headquarters in the Lowman Building, Seattle, Wash., operates from Seattle and Puget Sound to Alaska ports. The chief officers are S. W. Eccles, president, 165 Broadway, New York; R. W. Baxter, vice-president, Seattle, Wash. The vessels of the fleet belonging to this company are the Alameda, 3,158 gross tonnage; the Cordova, 2,273 gross tonnage; the Dolphin, 824 gross tonnage; the Dora, 320 gross tonnage; the Dirigo, 823 gross tonnage; the Edith, 2,369 gross tonnage; the Jefferson, 1,615 gross tonnage; the Latouche, 2,329 gross tonnage; the Mariposa, 3,158 gross tonnage; the Northwestern, 3,496 gross tonnage; the Santa Ann, 1,059 gross tonnage; the Seward, 2,471 gross tonnage; the Victoria, 3,502 gross tonnage. This line has direct service between Seattle and Ketchikan, Wrangell, Juneau, Skagway, Cordova, Ellamar, Fort Liscum, Valdez, Latouche and Seward; also Petersburg, Treadwell, Douglas, Haines, Sheep Creek and Valdez. The Dora operates be-

tween Seward and Port Graham, Seldovia, Homer, Kodiak, Uyak, Karluk, Gold Bay, Chignik, Unga, Coal Harbor, Sand Point, Belkotsky and Unalaska, of the Alaska Peninsula route. The steamer Victoria operates to Nome and St. Michael.

The Western Alaska Steamship Company, W. C. Dawson, president, operates vessels between Seattle and Bering Sea and Kotzebue Sound ports during the open season.

The Pacific Coast Steamship Company of Seattle, J. C. Ford, president, of Seattle, and George H. Higbee, vice-president, of San Francisco, operates sixteen steamers, namely; the Congress, 7,985 tonnage; the Governor, 5,250 tonnage; the President, 5,248 tonnage; the Queen, 2,728 tonnage; the City of Puebla, 2,624 tonnage; the Umatilla, 3,069 tonnage; the Senator, 2,409 tonnage; the Spokane, 2,279 tonnage; the City of Seattle, 1,411 tonnage; the City of Topeka, 2,562 tonnage; the Montara, 2,562 tonnage; the Eureka, 2,122 tonnage; the Meteor, 2,301 tonnage; the Tampico, 2,132 tonnage; the Coos Bay, 544 tonnage; the Delhi, 986 tonnage.

The Senator operates in a regular passenger and freight traffic during the season of navigation to Nome and St. Michael, Alaska. The Spokane and the City of Seattle operate to Skagway, calling at Prince Rupert, B. C., Ketchikan, Wrangell, Juneau, Treadwell, Douglas and Haines. The Delhi plies between Seattle and Juneau, calling at Sitka, Killisnoo and ports on the west side of Prince of Wales Island, and the cannery ports. The Meteor serves between Seattle and Southeastern Alaska ports. Most of the other steamers of the fleet are engaged in the service of the Coast south of Puget Sound.

The White Pass & Yukon route, which is conducted by the Pacific & Arctic Railway and Navigation Company, the British Columbia Yukon Railway Company, the British Yukon Railway Company, and the British Yukon Navigation Company, maintain a headquarters in Seattle. They

operate a railroad from Skagway to White Horse, river steamers from White Horse to St. Michael and Tanana River points. The three other companies in this compact operate steamers from White Horse to Dawson and other points; on the lower river sections and between Caribou and Atlin in Canada.

Only such references to Seattle-Alaska transportation and commerce are given in the foregoing as are calculated to indicate the datum, in respect of these great interests, which the status of 1914 affords. It will be observed that the foundation already is laid for almost limitless expansion. New transportation lines will rise into function, and those now operating will enlarge their vessel lists in a ratio equal to the development of the resources of Alaska and the Pacific Northwest. In view of the present status one can find no authority for drawing a boundary line to the probable increase.

CHAPTER XXXIV.

CONCLUSION.

IMPORTANT LESSONS SUGGESTED BY THIS VOLUME—MARCH OF MATERIAL PROGRESS ACROSS THE CONTINENT—LATITUDINAL AND LONGITUDINAL ADVANCEMENT—LOOKING AHEAD — LEAVING THE THINGS BEHIND — OPPORTUNE OPENING OF ALASKA—DESTINY OF THE UNITED STATES—NEW OPPORTUNITIES—BETTER ECONOMIC ORDER.

IT would be strange, indeed, after all that has been said, and after the assemblage of such a vast array of facts and figures, if valuable lessons failed to characterize the concluding paragraphs of this effort. In one important sense, this work constitutes the opening paragraph of the concluding chapter of the history of one important period of a great continent. We have seen how the world's progress invaded America on the eastern seaboard, and, to some slight extent, in what manner this procession of human achievements has advanced from the western borders of the Atlantic to the eastern shores of the Pacific.

We have been reminded that this procession of progress, in its western march, has expanded latitudinally, as it has advanced longitudinally, until it has covered the whole of the North American Continent, with important exceptions as to Mexico, where Latin tendencies have raised a barrier, preventing that naturally great, rich country from sharing fully in this wonderful development. We have seen, too, in what impressive augmentation of the powers of rising civilization, the forces of progress are gathering greater

energies for a new era of conquest, as they correlate in the Pacific States.

We have seen, I say, how the wonderful destiny of human advancement looks not so much on what is left behind, as it grasps the things ahead in the way of incentives to continuous enterprise and conquest. So great and all absorbing is this tendency that we may discover in it the possibility of marching onward, without appropriating all the opportunities which this progress offers, from one mile post to another, as they are overtaken and passed.

The question forces itself pointedly, Is the race making the most of its procession of opportunities, as it moves forward in the other procession of generations? In other terms, is there not the danger that those in the rear, or middle columns of human progress, who persist in functioning as eyes for those on the outposts, may be overlooking or underlooking the real opportunities for enlarging the happiness of mankind?

In still other concepts may the danger not exist of overlooking Alaska until it is passed by? Suppose the race had undertaken to commercially carry the banner of Christian civilization across the Pacific and into the Orient without the aid of the Panama Canal? Or, think, if you will, of an attempt to bring this canal into full function as a factor of trans-oceanic commerce, while the mighty resources of Alaska, so essential, to give full meaning to transportation, remain undeveloped. Would not such a policy reach an anomalous climax?

These mighty agencies of progress must go along together. As has been indicated, the canal without the development of Alaskan resources could reach only a partial success, while the exploitation of the partly hidden wealth of Alaska without the canal would fall short of giving its destined bounty to mankind. With these two mighty instrumentalities for human gain working jointly, the present generation will witness a wonderful growth of all the Pacific States, in population, industrial enter-

prise and commercial importance, constituting a normal foundation for the commercial supremacy of the Pacific, and the final transformation of the Orient.

The lands over which progress makes its wonderful pilgrimage of continuous gain should be completely developed, else this pilgrimage will fall short of destined bounty. If Alaska, for example, should be passed, in any important measure, mankind soon would find itself short of gold, of copper, of coal and of many other indispensable things. And yet there are people in our own country who appear, from the attitude which they present, to believe that the race can get along well enough without Alaska. Such a doctrine is probably as great a folly as would have been the idea of dispensing with Pennsylvania, or Montana, or California, or the iron and copper regions at the head of the Great Lakes.

Before another generation is realized, the people of the United States will acknowledge that the greatest achievement of the Pioneers of the West in the first quarter of the Twentieth Century was the re-discovery of Alaska,—of Alaska, the wonderful land of bountiful resources and new opportunities. At least this is the settled belief of the writer.

Another important lesson, at least suggested by this volume, is somewhat in the fact of a new revelation of the destiny of the United States. It may all be said short, in the expression that this nation, now the most *western* great power of the earth, soon is to become the most *central.* The geographic boundaries of civilization rapidly are changing. In a wonderful truth the external reality of change is the all dominant force in the evolution of human life.

One can see both in its origin and the trend of its progress that the United States is destined to become one of the greatest, if not, for a long period, the greatest of

the commercial nations of the world. As all can see, it rapidly is becoming the embodiment of a *new nationality.* To this evolution the commerce of the world has contributed, until, already, in our day the *Great American Nationality* presents, in a process of making, the strongest potentialities of blood, language, lore, faith, courage, spirit and brotherhood of all the races of mankind. These contributions are being fluxed into a new compound, not distinctively manifesting a dominancy of any one prior nationality, but rather a wonderful blending of the surviving elements of them all.

As Max Mueller sees all the religions of mankind compounding into one surviving unity, in like manner can the writer behold, in the rising new race of America, a more excellent manhood and womanhood than has yet adorned the earth. But this realization will not be a final type. A greater will follow it, and the desert, forsaken lands of the world will bloom again to welcome its advent.

But America will have its great period of world rulership, and those who projected and constructed the Panama Canal, and those instrumental in the development of Alaska, and the industries and commerce of the Pacific West are among the builders of this incoming new age.

Another valuable element of instruction which this collection of data, and assemblage of observations suggests is found along economic lines. We have been declaring in theory that the natural wealth of this great continent is the rightful heritage of the people whose heads and hands develop it,—of all the people who will work, on the basis of equal opportunity to all, while, in practice, we have realized the industry of the many for the material benefit of the few. No sooner were the doors of Alaska partly opened to the world's enterprise, than the hand of designing monopoly was discovered at

work in the Territory. A few sought to appropriate the wealth of that country to the exclusion of the multitudes for whom nature prepared these bounties. A halt had to be imposed, and this halt, in part, is what put the "lid" on Alaska. The struggle of readjustment followed, and in this the national government extended a supporting and regulating hand.

This manifestation of governmental control came in response to a somewhat misguided economic agitation that has created unrest in the United States during the past twenty-five years, and which, in recent years has culminated in destructive violence. It is hoped the country has learned one important lesson in this respect, namely, that it is unsafe to allow human enterprise the full scope of personal human selfishness, and that the wiser plan is found in the active presence of a strong governmental control of all industrial undertakings calculated to affect the social body of mankind. In this view the National Government of the United States, beholding in Alaska a vast undeveloped empire has seized upon it, on behalf of the whole people, in a plan of material aid and equitable control which promises to bring into force a better industrial and economic order in the whole country.

The idea for the development of Alaska appears wisely to be not to allow the establishment of industrial and transportation monopolies or combines in that new land, in the careless hope of being able to control them after they gain a powerful foothold, but to begin and continue development under government regulation in such a way as to secure a square deal for individual industry and thrift in that great country. This new movement invests the present Alaska program of the Federal Government with absorbing interest, and it closely will be observed as the years go by.

An equally important lesson is at hand in the recently developed attitude of certain Eastern interests in apparent opposition to the speedy exploitation of Alaskan resources. This attitude came into view when it was sought to obtain from the Congress of the United States an initial appropriation for the construction of a trunk line system of railroads in Alaska, for the purpose of founding the base of an adequate transportation plan in that country. It soon became plain that selfish Eastern interests were active in efforts to make use of the widespread ignorance of the people of the East concerning the real value of Alaska as a wealth producing country. This manifestation made a general educational movement, as to the real status of this new northland advisable and necessary, and the Seattle Chamber of Commerce came to the rescue in a most valuable and effective campaign. The good results of this work teach us, as elsewhere stated in this volume, the necessity for a continuation of the propaganda.

Probably the most important lesson to be gathered from this volume by the average reader is to be found on the line of the *new opportunities* which now are being made available through this movement of the National Government to exploit the resources of Alaska. These comprehend a wide scope, and include the prospect of the wage earner, the small business need, the ambition of the capitalist, the miner, the manufacturer, the agriculturist, the stock raiser, the seeker after employment or business in the transportation industry, the merchandiser and the speculator.

The arena of these new opportunities includes Alaska, the State of Washington, the City of Seattle, and the whole Pacific Northwest. Business, in these sections of the country today may be likened to a dense fog just before it begins to lift. In a sense the prospect is dark from every viewpoint. But little light can reach the

natural vision. The way is closed. One cannot see in what direction it is safe or profitable to proceed. It is the occasion for courage and faith. The great program of the government is only beginning to operate. Progress has not get gone far enough to shed the light of achievement. The business fog which so long has hung in density over the country scarcely has begun to lift. One cannot see far, but distant sounds fall upon the ear now and then to inspire the hopeful. As I write, the Alaska cable brings these meagre tidings:

ALASKA COMMISSIONERS INSPECT SEWARD ROAD.

Special Cable to Associated Press.

Seward, Alaska, June 14.—W. E. Edes and Lieut. Fred Mears, U. S. A., of the Alaska Railroad Engineering Commission, arrived today with a party of surveyors from Seattle, en route to Ship Creek, to begin work on the survey of possible routes for the government railroad to the Matanuska coal field.

Mr. Edes and Lieutenant Mears made an inspection trip today over the Alaska Northern Railroad, which runs from Seward ninety miles toward the interior, and departed late tonight for Ship Creek. After establishing a camp at Ship Creek, Mr. Edes will return to Seward to establish headquarters for the engineers.

We knew of course, that the Alaska Railroad Engineering Commission had left Seattle for the north wonderland, but this is the first news of their activity on the

ground. It comes like the first streak of dawn. It inspires a new and higher hope. It is to be followed by other and fuller light. The fog soon will raise, opening the new prospect to clear vision. But this is not the time to wait. This is the very hour in which one should invest, because it is full of advantages,—full of profit-gaining opportunities. It is not the time to sell but the hour to buy. One owning a small business in Seattle or Western Washington, or in Alaska, should, of all times refuse to sell out now. To hold on a few months longer probably will be to realize unexpected rewards. On the other hand this is the time to buy, or to invest in the newly dawning opportunities. The people should hold on to what they have, and watch the fog lifting. The people of the East soon will begin to pour into the Western country on the way to Alaska, or to search for employment or business openings in or near this Gateway. By this time in 1915, the streets of Seattle, the steamships running to Alaska, and the towns and cities of the Puget Sound region probably will be over crowded. This means a great increase of the status of all classes of business in the localities named.

In this realization people who may have sold out, greatly will regret the action, unless their sale was in the nature of another business investment, because an ordinary business location then, in the settled belief of the writer, will command more than double what it will this year. But, of course, business and industrial, as well as employment opportunities will have multiplied, and there will be a field for new enterprises on many lines.

But these new opportunities are for the people of the East and Middle West, as well as for those already located in the Pacific States, and, it safely may be predicted that thousands of those now distant from this section of the country will be among the first to seize them. This is due to the strange anomaly that very often those closest to valuable business openings are among the last to discover them. Besides this the severe depression

which, for several years, has spread over the West, as well as the East, finds business conditions in a great portion of the country at such a low ebb that the people appear to be slow in awakening to their new advantages. Industrial arteries probably will not assume a strong flow until new life is infused in them by the approach of the people from the East. The latter already are making their appearance in Seattle.

But turning to the greater lesson of new opportunities within the Territory of Alaska, and to that phase of our subject which appeals to all the world, I desire once again to quote from Gov. J. F. A. Strong of Alaska, this time from an able article written by him, which appeared in The Westerner in May, 1914. He says:

"In the public mind, Alaska is looked upon as a country that is solely a producer of gold, largely from alluvial, or placer deposits; the millions of dollars annually produced from its fisheries, and their steadily growing importance, are not given adequate consideration; its growing copper production, with its vast possibilities, receives but passing notice; the wealth of timber in the southern sections has scarcely been realized; its agricultural possibilities are just beginning to be considered worthy of some attention, while its coal lands, yet wholly undeveloped, are vast in extent and the coal is of superior quality. Besides, Alaska has iron deposits, oil fields, silver and lead, tin, graphite, gypsum, marble and many other natural resources which all the world needs. To an Alaskan all this is known; to the people of the United States it is a matter of indistinct knowledge or is not known at all."

The foregoing constitutes an embodiment of new opportunities which teaches us that this new northland is sending out an invitation to the capital, skill and en-

terprise of the world, which probably will engage millions of human beings and billions of dollars in their development, and which will add many billions to the wealth of mankind. This is the greater lesson which this volume strongly suggests.

It is safe to say, in conclusion of this effort, that a new era, a period of constructive and permanent development is now beginning to spread over Alaska, and that its future is filled with much brighter promise than ever before. The commercial significance of the country is seen in its 25,000 miles of coast line, and its 6,000 miles of navigable inland waterways.

THE END.

DIAGRAM SHOWING WATERFRONT OF SEATTLE—140 MILES OF FRESH AND SALT WATER DOCKAGE

Courtesy Kroll Map Co.

APPENDIXES

APPENDIX I.

Northern Canadian Railroads.

In Alaska, interest naturally is awakened in the more northern Canadian Transcontinental lines. In the course of its work, the Alaska Railroad Commission secured considerable information in regard to railroad construction in the northwestern part of Canada. This the commission thought necessary for two reasons, namely:

First. The commission had under consideration two railway routes (those based on Skagway and on Haines) which had been proposed to reach the lower Yukon from Alaskan terminals, but each with a long stretch of line passing through Canadian territory; and

Second. A branch line has been proposed to extend from a point of Canada's most northerly transcontinental line directly into the Yukon Valley, and while this branch line was not under construction and was projected to lie entirely in Canadian territory, yet if completed, it would connect with any system of railroads in the Yukon Valley and would have an influence on Alaskan transportation problems that would require study.

Examination of Canadian work further seemed desirable for the following reasons:

Actual railroad construction in Alaska has not been extensive. In Canada, much construction is under way, and a great deal of this is of the class that might be called pioneer work, where construction is in virgin country not differing greatly in character from large sections of Alaska. It was desired to obtain data as to costs of construction and operation, and information as to tonnage and growth of commerce after completion of the work, as it was believed that all such data would be useful to supplement the Alaska data on hand.

In addition to this examination into physical character, the commission obtained some data as to the Canadian Government's policy in encouragement of such pioneer railroad construction. It was necessary to take up this question, as it was believed that if either of the two Alaskan-Canadian roads were constructed the effect of such assistance as Canada might give to the portion of the line lying within Dominion territory would have a direct bearing on costs of construction and operation.

There are in Canada a few examples of railroads owned and operated by the Government, and of railroads owned and leased by the Government, and many examples of railroads assisted by various methods, the assistance being granted not only by the Dominion Government but by the Provinces and municipalities. While the

now well-established policy of Government assistance dates well back, the past few years marks the greatest activity. The examples of Government-owned railroads now in operation or under lease contain nothing that bear on the questions above referred to. They all occur in the eastern Provinces and are, in the main, examples of early construction. Similarly the Canadian Pacific system, Canada's first transcontinental line, received great assistance. But the Canadian policy toward it was adopted in large measure, as a condition to the forming of the confederation; and while it was entered into mainly to develop the northwest Provinces for settlement, it may be here briefly passed over with the statement that, in general, the Government assistance closely parallels United States practice in assisting transcontinental roads at about the same time or earlier.

The largest and most important work, however, that is now engaging the Dominion Government is the construction of the National Transcontinental Railway, known popularly as the Grand Trunk Pacific. Under agreements dated in 1903 and modified in 1904, ratified by the Dominion acts of those years, the Grand Trunk Pacific Railway Co. has undertaken certain obligations with respect to a line of railway wholly in Canada, extending from Moncton, a seaport in New Brunswick, to Prince Rupert, the Pacific terminus in British Columbia, a distance of 3,600 miles. The railway is composed of two divisions, namely, the eastern division, extending from Moncton to Quebec, thence westerly through the northern parts of the Provinces of Quebec and Ontario to Winnipeg; and the western division, from Winnipeg to Prince Rupert, British Columbia. The eastern division is being constructed by the Government and on completion is to be leased to and operated by the company for a period of 50 years, of which period the first 7 years will be free of rent, the balance of the period calling for a rental of 3 per cent of the cost of construction, exclusive of equipment, which is to be furnished by the company. The company is constructing the western division under the following arrangement: The Government guarantees the payment of principal and interest on the bonds to an amount equal to 75 per cent of the cost of actual construction, which is supervised by the Government; but it is further provided that this amount of guaranty is not to exceed $13,000 per mile in respect to the prairie section from Winnipeg to the eastern limit of the Rocky Mountain section, established at Wolf Creek, 120 miles west of Edmonton.

From Quebec westward, excepting at and in the vicinity of the city of Winnipeg, this transcontinental system is entirely in a virgin country, and is being constructed principally for freight haulage at low cost to handle the heavy crops of grain expected to result from the rapid development of the large areas of land opened up and tributary to the system. It will, however, also provide for efficient transcontinental service. The grades are low (0.4 per cent against eastbound traffic, excepting a 20-mile stretch of 1 per cent in the Rocky Mountains, and 0.6 per cent against west-bound traffic) and the sharpest curve is 6 degrees. The expense of construction as against the 2 per cent grades and 10 degree curves usual in most transcontinental lines is probably at least doubled. The average cost of the

mileage from Winnipeg to Moncton is about $85,000 per mile, exclusive of rolling stock and of the great bridge at Quebec.

It is expected that this system will be completed and ready for through traffic in 1914, and it is an interesting fact that the large Government expenditures on the eastern division of this project are defrayed by direct appropriations from Dominion revenue, without the necessity of bond issues.

There has been under consideration the construction of a branch line extending from Hazelton, in the mountain section of this system, to Dawson, but a decision to construct this branch has not yet been made. As is generally known, the line known as the Pacific Great Eastern, from Vancouver, B. C., to Fort George, crossing and connecting with the Grand Trunk Pacific at that point, is under construction under the auspices of the British Columbia Provincial Government. This road is assisted to the extent of $35,000 a mile by the Government. The construction work is in the hands of Foley & Welch, contractors. It is being pushed for early completion.

The Canadian Government has recently decided to construct a line from the great wheat belt northward to Hudson Bay, with a view of providing a summer water route with a short rail haul to the grain market of Liverpool. This project involves about 400 miles of construction.

The construction of the Timiskaming & Northern Ontario Railroad forms a most interesting study, as conditions here closely parallel those found in Alaska. This is a railroad that was projected by the provincial government of Ontario, and at the time of its projection the Government had no assurance that supporting traffic could be expected for a considerable period after completion. The province of Ontario was unprovided with railroads except in its narrow southern portion. The largest part of the provincial territory was north of any railroad and extended to the waters of James Bay, a large arm at the southern end of Hudson Bay. The climate of this portion does not differ materially from that of the interior of Alaska. It was entirely unsettled by reason of the absence of transportation facilities, but was known to have some timber resources, agricultural possibilities, and prospective mineral wealth. The basic idea, however, in its construction, was the development of the virgin territory which comprised the larger part of the Province, and which held out promise of reasonably quick settlement by home builders. The success of this enterprise is now assured, its construction having effected the purposes for which it was designed, in settlement of the region, development of the agricultural and timber resources, and in the discovery of a rich mineral deposit (the "Cobalt" field) which was not known to exist when the project was undertaken. As originally projected, its terminus was to have been in the heart of the wilderness, and called for about 50 miles less construction than has been executed, but the extension was decided upon for obvious reasons as soon as the route of the National Transcontinental line was fixed, and was made to effect a junction with that line. This can not, however, be regarded as having had a material bearing on the success of the provincial project, which was adopted and construction begun before the transcontinental project was undertaken.

APPENDIX II.

Market for Alaskan Coal.

As repeatedly noted throughout this volume, Alaska is suffering from high rates enforced on all supplies by lack of proper transportation facilities. Unfortunately, states the Alaska Railroad Commission, in 1913, about six years ago, just as railroad construction appeared most promising, the question of the development of coal resources was precipitated with great rancor and with considerable misrepresentation on both sides. This has resulted in an absolute cessation of railroad construction and a gradual shutting down of railroad operations, which is now almost complete. No definite policy in regard to Alaska coal lands has been determined on, and no one can safely predict when coal-mining operations on a commercial scale will be begun. There is much confusion of counsel as to the proper methods to adopt to remedy this unfortunate situation.

While this has been unfortunate to the entire Pacific seaboard, which needs a low-priced fuel, the result to Alaskans has been particularly distressing. There are many claimants to coal land in Alaska who have been unable to obtain patents to which they feel they are entitled. There are owners of other kinds of mineral properties who can neither sell nor work them because transportation costs are above the point where operations can be carried on at a profit, and who feel that the interruption to railroad work has prevented the development of their properties. There are numerous promising mineral fields which are kept closed by the present condition of transportation, as only the richest discoveries would prove of value. By far the greater number of those who desire the development of Alaska, however, have no direct interest in any coal lands, the claimants to which are few in number. The interests of most of the settlers in Alaska are intimately bound up in the business revival which is expected as soon as the coal lands are opened and railroad construction follows.

The situation above referred to is particularly to be deprecated on account of its effect on the coal situation. It is believed that except for the controversy precipitated six years ago, at least one of the coal fields would have been extensively developed, and if it contains valuable deposits, as seems probable, markets might have been developed by this time from which other fuels would have found it difficult to dislodge it. This opportunity may now be lost, as the California oils and the eastern coals via Panama may largely operate to keep Alaskan coal out of any west coast markets except for local use.

The United States Navy now uses coal on the Pacific Coast, its ships being supplied from its two depots in Puget Sound and San Francisco Bay. Most of this coal is shipped around Cape Horn and costs about $7.30 per ton delivered at San Francisco in foreign bottoms and about $2 more if shipped in domestic bottoms. This price includes the cost of the coal and will vary considerably, principally on account of the state of the transportation market.

Coal is also shipped to Manila for the use of the Asiatic fleet, some around Cape Horn and some around Cape of Good Hope. The cost at Manila is about $9 per ton in foreign bottoms, including the cost of the coal and runs considerably higher in domestic bottoms. These costs vary with the transportation market. The Navy also maintains a storage pile in the Hawaiian Islands, where it is now engaged in the construction of a large coal storage plant.

The total coal consumption of the Navy is between 700,000 and 800,000 tons annually, and of this about 150,000 tons are used in the Pacific, exclusive of that supplied to the Asiatic fleet. It is estimated that the department will require 300,000 tons annually on our Pacific Coast after the completion of the canal, as it is anticipated that a large part of the fleet now on the Atlantic Coast will be frequently transferred to the Pacific.

The Navy Department will probably construct coaling stations at different points in the Pacific and provide them with coal piles of about 200,000 tons each. There may be three or four such equipments, and to complete the storage from 600,000 to 800,000 tons in excess of current consumption will be required within a period of a few years. It is quite likely that after the completion of the canal the Navy will be in the market for coal for use and storage in the Pacific to the extent of about 450,000 tons annually, until the coal storage plants are filled. This market, however, will never exceed this figure, as new ships are being equipped for oil burning. This large demand will cease as soon as the storage piles are stocked, and the regular demand will begin to decline as the coal-burning ships pass out. Purchases of this extent can not be definitely planned and the figures are given as a maximum. It may be stated, however, that to be assured of any portion of this market the Alaska coal will first have to show its suitability and then meet the price of the known and established eastern coals, such as New River, Pocahontas, and Georges Creek. The best information at hand seems to indicate that while Alaska coal seems to be suitable as to composition it may run too high in slack to meet naval requirements.

Besides changing the quantities required by the Navy, the completion of the Panama Canal will effect an immediate change in the Pacific coal markets. This is difficult to forecast, depending as it does on prices of coal in the East and on the condition of the transportation market. It is probable that, if the present prices continue, the Navy can deliver coal in San Francisco from the eastern mines, at a price including the cost of the coal, of about $6.60 per ton; this by using large colliers with no return cargo. If commercial ships can be assured of obtaining suitable return cargo they should be able to deliver coal at a lower price. It is possible that these coals may be bought in cargo lots at San Francisco at as low a price as $5.50 per ton, and at Seattle at prices but little higher. Should Alaska coal prove suitable for naval use it will have to meet whatever these prices may be; and it is probable that if it can meet the San Francisco price, it can also meet the price of the eastern coals delivered at Honolulu and Manila.

The question of the establishment of Alaskan coal in the Pacific markets is finally one of cost. In a recent bulletin of the

Geological Survey, a member of this commission gives an analysis of the consumption of coal in Pacific waters. This analysis would tend to show that despite the advances in the use of oil for fuel purposes there is on the Pacific Coast an annual market for nearly 1,500,000 tons of coal at points where competition by Alaska coals is not impossible; this amount being considerably less than half the total present coal consumption of the Pacific Coast States and Alaska.

The principal objection to such coal as has been obtained from the Bering fields is the low proportion of lump in the product. A development of the fields may locate coals running considerably higher in lump, but the geological indications are such as to give little promise of this. While this may remove the coal from consideration as a naval supply except in emergency cases, the high percentage of slack does not lower its value as a coking coal, nor as a steaming coal where forced draft is not used. The statistics referred to show that in the Pacific Coast States, about 200,000 tons per annum are used for coking purposes for which Alaska coal seems entirely suitable, to the exclusion of other Pacific coals. It seems suitable also to supply about 25,000 tons per annum of blacksmith coal which now comes from Georges Creek at high freight rates.

The cost of handling coal from an Alaskan port to Seattle or San Francisco would be dependent mainly on the quantity that could be sold in those markets. The size of the collier, numbers of them required to handle the tonnage, regularity and continuity of service, would have to be determined after other factors now unknown are fixed, the principal of which is the price at which the Eastern coal can be laid down in these markets.

The best information at disposal would indicate that coal can be mined in the Bering River and Matanuska fields at from $2 to $2.25 per ton. In operations of magnitude these figures should not be exceeded. If there is a market for 500,000 tons a year, Bering coal can be delivered aboard colliers at Cordova at about $1.42 per ton. It is estimated that a freight rate from this point to Seattle will be between $1 and $2, depending on the size of collier and regularity of service, and that corresponding figures for San Francisco will be $1.50 to $2.50. With a 1,000,000-ton output the lesser figures should be reached and might be lowered. These figures would indicate that coal from this field has a chance of excluding the Eastern coals from Pacific ports north of San Francisco, and possibly also from that port, and on account of its superiority in fuel value to coals from British Columbia and other western mines it should be able to compete successfully with them.

There is not much coal used in Alaska at the present time, and oil is rapidly supplanting it. This, of course, is due to the high cost of coals, most of which are imported from British Columbia mines. It is believed that this condition would not continue if Alaskan fields were opened, as the price of oils is advancing, and present prices of a much inferior coal are excessive.

The present coal consumption in Alaska is about 100,000 tons a year, but it is believed that if the Bering River coal is as good as is expected and if the field is opened to development and railroad construction resumed, an immediate local market of considerable

size will be created. Smelters in Prince William Sound, local demands for fuel at Cordova, Valdez, and the mines in Prince William Sound and in the Kotsina-Chitina district, a supply for Alaska steamers and for water shipments to other Alaskan ports seem to justify a belief that 150,000 tons per annum would find a ready sale almost at once and that with the development of the country this local market would grow rapidly.

The situation as to Matanuska coal is not so favorable. The haul to Seward is expensive, the cost of transportation and delivery aboard ship running from $3.38 per ton on a 500,000-ton output to $2.06 per ton on a 1,000,000-ton output. Unless it should develop that the coal is much better in quality or that the mining cost is greatly less, this coal can not compete at Seward with the Bering coal at Cordova, and it could not hope to compete with it in the larger Pacific markets, and possibly not with the coals from the East. If both fields are opened it seems evident that the markets for this coal would have to be found largely on the railroad itself, and while these markets will probably be ultimately very valuable they may not hold out enough immediate prospect to justify extensive mining operations.

APPENDIX III.

Official Directory of Alaska.

Governor—John F. A. Strong, Juneau.

Secretary to the Governor—William W. Shorthill, Juneau.

Ex Officio Secretary of Alaska—Charles E. Davidson, Juneau.

Delegate to Congress—Hon. James Wickersham, *Fairbanks*, Washington, D. C.

UNITED STATES SURVEYOR GENERAL'S OFFICE.

Juneau—Charles E. Davidson, surveyor-general; George Stowell, chief clerk; Martin George, chief draftsman; Edward T. Lindner, stenographer and typewriter clerk; Charles E. Naghel, typewriter clerk; William Rugg, draftsman; Frank Moon, messenger.

United States Deputy Surveyors—A. G. Blake, Nome; H. P. M. Birkinbine, Haines; Frederick Butterworth, Valdez; M. O. Bennett, McMurray, Wash.; A. H. Bradford, Seattle, Wash.; H. P. Crowther, Juneau; C. E. Davidson, Fairbanks; H. R. Gabriel, Seattle, Wash.; C. S. Hubbell, Seattle, Wash.; R. A. Jackson, Fairbanks; A. M. Keating, Katalla; A. G. Mosier, Sedro-Woolley, Wash.; William Muncaster, Seattle, Wash.; L. C. Michaelis, Seattle, Wash.; L. S. Robe, Ruby; M. M. Reese, Katalla; L. D. Ryus, Ketchikan; D. B. Skinner, Seattle, Wash.; L. W. Storm, Valdez; D. E. Stubbs, Iditarod; F. J. Wettrick, Juneau; F. W. Williamson, Juneau; Victor H. Wilhelm, Juneau; Harold H. Waller, Seattle, Wash.; Geo. C. Willey, Seattle, Wash.

United States Deputy Mineral Surveyors—Banning Austin, Circle City; A. G. Blake, Nome; A. H. Bradford, Seattle, Wash.; H. P. M. Birkinbine, Haines; Frederick Butterworth, Valdez; W. O. Bennett, Seattle, Wash.; C. H. Ballard, Seward; H. P. Crowther, Juneau; C. E. Davidson, Fairbanks; Charles Estmer, Iditarod; W. A. Funk, Idaho Falls, Idaho; George Fuerman, Latouche; Clinton Gurnee, Oakland, Cal.; H. R. Gabriel, Seattle, Wash.; W. A. Hesse, Seward; C. S. Hubbell, Seattle, Wash.; Udo Hesse, Seattle, Wash.; Daniel H. Jones, Nome; George S. Lewis, Fairbanks; J. L. McPherson, Seattle, Wash.; A. G. Mosier, Sedro-Woolley, Wash.; O. A. Nelson, Chitina; L. D. Ryus, Ketchikan; L. S. Robe, Ruby; M. M. Reese, Katalla; Otto D. Rohlfs, Seattle, Wash.; I. M. Reed, Nome; L. W. Storm, Valdez; R. J. Sommers, Nome; D. E. Stubbs, Iditarod; Richard Smith, Nome; B. D. Stewart, Juneau; C. R. Turner, Malden, Mass.; N. C. Titus, Wenatchee, Wash.; J. P. Whittren, Nome; F. J. Wettrick, Juneau; E. Fred Wann, Portland, Ore.; Victor H. Wilhelm, Juneau; F. W. Williamson, Juneau; R. F. Whittham, Tacoma, Wash.; Harold H. Waller, Seattle, Wash.

UNITED STATES CUSTOMS OFFICIALS.

Juneau—J. R. Willis, collector; C. D. Garfield, special deputy collector; J. F. Pugh, deputy collector and inspector; George M. Simpkins, deputy collector and inspector; S. Irvine Stone, deputy collector and inspector (stationed at Kodiak); W. A. McNeiley, deputy collector and inspector (stationed at Seward); E. A. Rasmussen, deputy collector and inspector (stationed at Yakutat);

George Barron, deputy collector and inspector (stationed at Sitka); Darrell A. Meek, stenographer and typewriter.

Ketchikan—Milson S. Dobbs, deputy collector in charge; M. S. Whittier, deputy collector and inspector; James Millar, deputy collector and inspector (navigation season); August Detlefson, deputy collector and inspector (navigation season).

Wrangell—F. E. Bronson, deputy collector in charge; L. M. Churchill, deputy collector and inspector (navigation season).

Skagway—Fred J. Vandewall, deputy collector in charge; G. G. Miller, deputy collector and inspector; Albert C. Latham, deputy collector and inspector (navigation season).

Eagle—J. J. Hillard, deputy collector in charge; O. F. Horn, deputy collector and inspector (navigation season); John E. Olson, deputy collector and inspector (navigation season).

Forty Mile—John L. Abrams, deputy collector in charge; John Elden, deputy collector and inspector.

St. Michael—Edwin R. Stivers, deputy collector in charge.

Nome—R. W. J. Reed, deputy collector in charge; F. W. Butters, deputy collector and inspector (navigation season).

Unalaska—N. E. Bolshanin, deputy collector in charge.

Cordova—George W. Woodruff, deputy collector in charge; Charles B. Smith, deputy collector and inspector (stationed at Valdez).

Sulzer—Charles A. Sulzer, deputy collector in charge.

Fairbanks—No permanent officer in charge; position filled by detail from Eagle.

UNITED STATES COURTS.

Division No. 1—Judge, Robert W. Jennings, Juneau; court stenographer, S. H. Milwee, Juneau; clerk of court, Jay W. Bell, Juneau; deputy clerks, Harry Malone, John J. Clarke, C. Z. Denny, Juneau; E. S. Stackpole, Ketchikan; Martin Conway, Skagway. United States Marshal, H. L. Faulkner, Juneau; chief deputy, J. F. Mullen, Juneau; deputy United States marshals, Hector McLean, Juneau; William Fels, Douglas; Fred Fonzo, Skagway; W. S. Harding, Haines; T. S. Elsemore, Petersburg; William F. Schnabel, Wrangell; W. D. MacMillan, Craig; John Goodell, Sitka; J. H. Davies, Ketchikan. United States Attorney, John Rustgard, Juneau; assistant United States attorneys, H. H. Folsom, Juneau; Roy V. Nye, Ketchikan; clerk to United States Attorney, (Miss) Ina S. Liebhardt, Juneau. United States Commissioners, John B. Marshall, Juneau; R. W. de Armond, Sitka; Martin Conway, Skagway; W. G. Thomas, Wrangell; Carl Spuhn, Killisnoo; Edward S. Stackpole, Ketchikan; J. E. Rivard, Petersburg; U. S. Rush, Kasaan; William G. Pigg, Sulzer; Charles A. Fox, Craig; R. M. Odell, Haines; E. A. Rasmuson, Yakutat.

Division No. 2—Judge, John R. Tucker, Nome; court stenographer, (Mrs.) C. J. Nunne, Nome; clerk of court, John Sundback, Nome; deputy clerks, J. Alison Bruner, Nome; Charles A. Traeger, St. Michael. United States Marshal, Emmet R. Jordan, Nome; chief deputy, Louis M. Koster, Nome; deputy United States Marshals, Adrian B. Miller, Henry H. Darrah, Elmer Reed, Claude Scott, Nome; Hugh J. Lee, St. Michael; C. O. Lovell, Council; John Riordan, Teller; Robert H. Humber, Candle; Clarence H. Hawkins, Kiana. United States Attorney, F. M. Saxton, Nome; clerk to United States

Attorney, L. S. Kerr, Nome. United States Commissioners, George D. Schofield, Nome; G. A. Adams, Council; Frank H. Thomas, Shelton; Charles A. Traeger, St. Michael; Joseph H. Wood, Teller; Porter J. Coston, Candle; J. W. Southward, Kiana; John B. Ross, Solomon; Milton L. White, Kotzebue; Delbert W. Cram, Barrow; J. Wilson Reed, Bethel; Ralph W. Dempwolf (on board U. S. Revenue Cutter Bear), Nome.

Division No. 3.—Judge, Fred M. Brown, Valdez; court stenographer, Isaac Hamburger, Valdez; clerk of court, Arthur Lang, Valdez; deputy clerks, Thomas S. Scott, Charles A. Hand, K. L. Monohan, Valdez. United States Marshal, F. R. Brenneman, Valdez; chief deputy, J. H. D. Bouse, Valdez; deputy United States Marshals, A. C. Dowling, A. F. Sullivan, H. C. de Line, Valdez; James Wardell, Katalla; S. T. Brightwell, Cordova; W. E. Wood, Chitina; Isaac Evans, Seward; H. R. Brown, Knik; Karl Armstrong, Kodiak; Z. S. Moore, Unga; W. B. Hastings, Unalaska; Nels Sorby, Dillingham; Sidney D. Charles, McCarthy. United States Attorney, George R. Walker, Valdez; assistant United States Attorneys, Guy B. Brubaker, Valdez; William H. Whittlesey, Seward; clerk to United States Attorney, Frank J. Hayes, Valdez. United States Commissioners, A. Garriock, Nahnek; Robert D. Gray, Katalla; John H. Brownlow, Kenai; Leopold David, Knik; L. A. Jones, Copper Center; A. J. Adams, Cordova; F. C. Driffield, Unga; Lee Van Slyke, Susitna; Thomas W. Hanmore, Iliamna; George J. Love, Valdez; L. S. French, Dillingham; S. Irvine Stone, Kodiak; M. J. Conroy, Seward; Paul d'Hierry, Chitina; A. J. Diamond, Wiley; Robert D. Scott, Unalaska.

Division No. 4—Judge, Frederic E. Fuller, Fairbanks; court stenographer, E. T. Wolcott, Fairbanks; clerk of court, Angus McBride, Fairbanks; deputy clerks, C. C. Page, P. R. Wagner, Fairbanks; George W. Albrecht, Iditarod; Gilbert Nairn, Ruby; assistant clerks, Estelle Fitts, C. C. Heid, C. D. Leckie, Fairbanks. United States Marshal, Lewis T. Erwin, Fairbanks; chief deputy, J. E. Clark, Fairbanks; deputy United States Marshals, J. B. Mathews, M. O. Carlson, W. W. Fife, J. H. Miller, May C. Peterson, Fairbanks; Percy G. Charles, Iditarod; C. L. Vawter, Tanana; John B. Powers, Eagle; H. H. Wendling, Georgetown; A. H. Conlin, Flat City; T. H. Long, Ruby; George Berg, Nulato; E. D. Heppenstall, Wiseman; J. L. Anders, Hot Springs; C. T. Spencer, Circle; John C. Wood, Tanana; H. P. Shepherd, Ophir; United States Attorney, James J. Crossley, Fairbanks; assistant United States Attorneys, Louis R. Gillette, Bion A. Dodge, Fairbanks; clerk, Margaret N. Canovan, Fairbanks; United States Commissioners, John F. Dillon, Fairbanks; Samuel R. Weiss, Chatanika; William J. Fitzpatrick, Chena; Frank A. Reynolds, Circle; W. R. Taylor, Glacier; John A. Kemp, Steel Creek; U. G. Myers, Eagle; Gilbert Nairn, Ruby; A. J. Griffin, Richardson; Wilbur F. Green, Tacotna; Frank E. Howard, Wiseman; E. J. Steir, Georgetown; L. E. Rivenburg, Rampart; J. E. Coffer, Hot Springs; George W. Albrecht, Iditarod; W. A. Vinal, Ophir; S. J. Marsh, Caro; J. C. Dehn, Tanana; Charles E. Taylor, Flat City; Hanson Berg, Russian Mission; Wade Baker, Fox City; Omer S. Riley, Tofty; H. W. Strangman, Nulato; Karl Theile, Otter.

UNITED STATES LAND OFFICE.

Division No. 1—C. B. Walker, register, Juneau; Frank A. Boyle, receiver, Juneau.

Division No. 2—John Sundback, ex officio register, Nome; Emmet R. Jordan, ex officio receiver, Nome.

Division No. 3—Included in Division No. 1.

Division No. 4—Angus McBride, ex officio register, Fairbanks; Lewis T. Erwin, ex officio receiver, Fairbanks.

DEPARTMENT OF AGRICULTURE.

C. C. Georgeson, special agent in charge of Alaska investigations, Sitka; A. J. Wilkus, assistant, Sitka; G. W. Gasser, assistant, Rampart; M. D. Snodgrass, assistant, Kodiak; Laurence Kelly, assistant dairyman, Kodiak; J. W. Neal, assistant, Fairbanks.

EDUCATION.

J. F. A. Strong, ex officio superintendent of public instruction for white schools, Juneau.

NATIVE SCHOOLS.

P. P. Claxton, Commissioner of Education, Washington, D. C.; W. T. Lopp, superintendent of education of natives of Alaska, Washington, D. C., and Seattle, Wash.; H. C. Sinclair, supply agent, A. H. Quarless, disbursing agent, Seattle, Wash.; W. G. Beattie, superintendent southeastern district, Juneau; H. O. Schaleben, M. D., superintendent southwestern division, Seward; A. N. Evans, superintendent western division, Unalakleet; W. C. Shields, superintendent northwestern division, Nome; George E. Boulter, superintendent upper Yukon district, Tanana.

Physicians—Emil Krulish, passed assistant surgeon, Public Health Service (on special detail), Juneau; P. J. Mahone, Juneau; W. W. Council, Cordova; James A. Payzant, Chitina; H. O. Schaleben, Seward; Ovid B. Orr, Ahkiok; L. H. French, Nushagak; D. S. Neuman, Nome; W. L. Barbour, Kotzebue; J. W. Reed, Gambell; Bruce H. Brown, Nulato.

INTERNAL REVENUE.

Edgar C. Raine, deputy collector, Nome; George Hutchinson, deputy collector, Fairbanks.

IMMIGRATION SERVICE.

Domianus Maskeviczius, inspector in charge, Ketchikan; Albert H. Joy, inspector, Ketchikan.

FEDERAL MINE INSPECTION.

Sumner S. Smith, inspector for Alaska, Juneau.

BUREAU OF FISHERIES.

H. O. Smith, agent, Alaska salmon fisheries, Juneau; Ward T. Bower, assistant agent, San Francisco, Cal.; H. C. Fassett, assistant agent; E. M. Ball, inspector; assistant seal agents, Alexander H. Proctor, Philip R. E. Hatton; naturalist, seal islands, F. M. Chamberlain; fur warden, Harry J. Christoffers; deputy wardens, Claude J. Roach, Ernest P. Walker, Logan I. Evans, Fred H. Gray.

STEAMBOAT-INSPECTION SERVICE.

George H. Whitney, inspector of hulls, Juneau; Thomas E. Kell, inspector of boilers, Juneau; George W. Folta, clerk, Juneau; Thomas P. Deering, inspector of hulls, St. Michael; Carl F. Lehners, inspector of boilers, St. Michael; Jerome A. Desio, clerk, St. Michael.

LIGHTHOUSE SERVICE, SIXTEENTH DISTRICT.

Walter C. Dibrell, inspector, Ketchikan; Milo Hoadley, superintendent, Ketchikan; Albert B. Edwards, chief clerk, Ketchikan; W. K. Spaulding, J. F. Warder, clerks, Ketchikan; Arthur J. Ela, aid, Ketchikan; Rolf Fossness, depot keeper, Ketchikan.

FOREST SERVICE.

Tongass National Forest—W. G. Weigle, forest supervisor, Ketchikan; S. S. Swenning, deputy forest supervisor, Ketchikan; W. H. Babbitt, deputy forest supervisor, Craig; Bruce E. Hoffman, forest examiner, Ketchikan; F. A. Johnson, special fiscal agent, Ketchikan; Roy Barto, forest ranger, Ketchikan; James Allen, forest ranger, Petersburg; George H. Peterson, forest ranger, Sitka; Ethel S. Cotter, clerk, Ketchikan.

Chugach National Forest—T. M. Hunt, deputy forest supervisor, Cordova; H. W. Fisk, forest ranger, Katalla; L. Keith McCullagh, assistant forest ranger, Kenai; Jack Brown, forest guard, Knik; Elaine M. Hunt, clerk, Cordova.

GAME WARDENS.

Adam Schneider, Juneau; J. A. Baughman, Seward; Aron Ericson, Roosevelt (Kenai Peninsula); Andrew Hoey, Fairbanks; Robert S. McDonald, Fairbanks; Christian L. Larson, Chicken.

LOCAL OFFICERS.

Members of the Legislature of the Territory of Alaska First Session, 1913.

SENATE.

L. V. Ray, president; A. E. Light, chief clerk. Elwood Bruner, Second District, term expires 1916, Nome. Conrad Freeding, Second District, term expires 1914, Nome. B. F. Millard, Third District, term expires 1916, Valdez. Henry Roden, Fourth District, term expires 1914, Iditarod. D. A. Sutherland, Fourth District, term expires 1916, Ruby. J. M. Tanner, First District, term expires 1916, Skagway. H. T. Tripp, First District, term expires 1914, Juneau. L. V. Ray, Third District, term expires 1914, Seward.

HOUSE OF REPRESENTATIVES.

Earnest B. Collins, speaker; Barry Keown, chief clerk. Frank A. Aldrich, Second District, Nome; W. T. Burns, Fourth District, Little Eldorado Creek; Frank M. Boyle, Third District, Valdez; Earnest B. Collins, Fourth District, Fox; Dan Driscoll, Fourth District, Fairbanks; Thos. Gaffney, Second District, Nome; Robert D. Gray, Third District, Katalla; Chas. E. Ingersoll, First District, Ketchikan; H. B. Ingram, Third District, Valdez; Charles Davenport Jones, Second District, Nome; Milo Kelly, Third District, Knik; J. C. Kennedy, Second District, Candle; Arthur Glendenning Shoup, First District, Sitka; Wm. Stubbins, First District, Douglas; N. J. Svindseth, First District, Wrangell.

OFFICIALS AND BOARDS AUTHORIZED BY TERRITORIAL LEGISLATURE.

TERRITORIAL TREASURY.

Walstein G. Smith, treasurer, Juneau.

MINE INSPECTION.

William Maloney, inspector, Fairbanks.

PUBLIC HEALTH.

Governor J. F. A. Strong, ex officio commissioner of health, Juneau; assistant health commissioners, S. C. Shurick, Division No. 1, Wrangell; W. D'Arcy Chace, Division No. 2, Nome; W. H. Chase, Division No. 3, Cordova; M. F. Hall, Division No. 4, Fairbanks.

VITAL STATISTICS.

Charles E. Davidson, registrar, Juneau.

TERRITORIAL BANKING BOARD.

Governor J. F. A. Strong, president, Juneau; Walstein G. Smith, secretary, Juneau; Charles E. Davidson, Juneau.

BOARD OF COMMISSIONERS FOR PROMOTION OF UNIFORM LEGISLATION.

Royal A. Gunnison, president, Juneau; George B. Grigsby, Nome; Fred M. Brown, Valdez; Bertha F. Back, secretary, Juneau.

BOARD OF MEDICAL EXAMINERS.

I. H. Moore, president, Ruby; H. C. De Vighne, secretary-treasurer, Juneau; J. L. Myers, Ketchikan; J. H. Mustard, J. M. Sloan, Nome; Charles A. Winans, Valdez; J. H. Romig, Seward; J. A. Sutherland, Fairbanks.

BOARD OF DENTAL EXAMINERS.

W. E. Zuber, president, Ketchikan; G. C. Maule, secretary-treasurer, Douglas; L. W. Fromm, Nome; C. L. Hale, Cordova; Robert R. Myers, Fairbanks.

BOARD OF PHARMACY.

William Britt, president, Juneau; William H. Caswell, vice president, Valdez; Floyd E. Ryus, secretary-treasurer, Ketchikan; William B. Kirk, Nome; William Ramsey, Council; Edward V. Boyle, Cordova; Frank M. Dunham, Ralph T. Kubon, Fairbanks.

BOARDS OF CHILDREN'S GUARDIANS.

(Under juvenile court act, providing for a board in each judicial division.)

Division No. 1—Mrs. John G. Heid, Juneau; John Rustgard, United States Attorney, Juneau; H. L. Faulkner, United States Marshal, Juneau.

Division No. 2—Mrs. Joseph F. Plein, Nome; F. M. Saxton, United States Attorney, Nome; E. R. Jordan, United States Marshal, Nome.

Division No. 3—Mrs. George C. Treat, Valdez; George R. Walker, United States Attorney, Valdez; F. R. Brenneman, United States Marshal, Valdez.

Division No. 4—Mrs. Luther C. Hess, Fairbanks; James J. Crossley, United States Attorney, Fairbanks; L. T. Erwin, United States Marshal, Fairbanks.

BOARD OF TRUSTEES, SITKA PIONEERS' HOME.

Governor J. F. A. Strong, president, Juneau; Sergius George Kostrometinoff, secretary; W. P. Mills, treasurer, Sitka; Arthur G. Shoup, superintendent of home, Sitka.

BOARD FOR RELIEF OF DESTITUTION.

Governor J. F. A. Strong, superintendent, Juneau.

ADVISORY BOARDS.

Division No. 1—John Rustgard, United States Attorney, Juneau; H. L. Faulkner, United States Marshal, Juneau.

Division No. 2—F. M. Saxton, United States Attorney, Nome; E. R. Jordan, United States Marshal, Nome.

Division No. 3—George R. Walker, United States Attorney, Valdez; F. R. Brenneman, United States Marshal, Valdez.

Division No. 4—James J. Grossley, United States Attorney, Fairbanks; L. T. Erwin, United States Marshal, Fairbanks.

NEWSPAPERS IN ALASKA.

Chitina—The Chitina Leader (weekly).

Cordova—Cordova Daily Alaskan; The Alaska Times (weekly).

Douglas—Douglas Island News (weekly).

Fairbanks—The Alaska Citizen (weekly). Fairbanks Times (daily and weekly). Fairbanks Daily News-Miner and Tanana Tribune.

Iditarod—Iditarod Pioneer (weekly).

Juneau—Alaska Dispatch (daily and weekly). Alaska Daily Empire.

Ketchikan—Ketchikan Miner (daily and weekly). The Morning Mail (daily).

Kodiak—Orphanage News Letter (monthly).

Nome—The Nome Daily Nugget. Nome Industrial Workers (daily).

Petersburg—The Progressive (weekly).

Ruby—The Ruby Record-Citizen (weekly).

Seward—Seward Gateway (daily and weekly).

Sitka—The Thlinget (monthly).

Skagway—The Daily Alaskan.

Tanana—The Tanana News (weekly).

Valdez—The Daily Prospector. The Valdez Miner (weekly). The Commoner (weekly).

Wrangell—The Wrangell Sentinel (weekly).