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The Effect of Education Upon The Life of The Alaskan Eskimo

Howard H. Burkher

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THE EFFECT OF EDUCATION UPON THE LIFE OF
THE ALASKAN ESKIMO

BY

HOWARD H. BURKHER

A DISSERTATION SUBMITTED TO THE GRADUATE COMMITTEE IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS

DEPARTMENT OF EDUCATION
BUTLER UNIVERSITY
1929
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CONTENTS

Chapter Page

I. Introduction. 1

II. Racial Traits of the Eskimo.
Geographical distribution of the Eskimo race. Authority for tribal classification. Distribution of tribes from Point Barrow to Bristol Bay. Physical characteristics. Unifying influence of various educational factors. Summary. 4

III. Comparison of Primitive and Modern Foods.

IV. Comparison of Primitive and Modern Clothing.

V. Comparison of Primitive and Modern Habitations.
Types of dwellings used for different seasons. Method of constructing the winter house at Point Barrow. Variations in winter house construction in different tribes. Universality of community house (kashim). Development of modern winter houses in different tribes. Use and construction of snow houses. Changes in use and construction of tents. Influence of education in bringing about the adoption of modern forms of habitations. Summary. 39
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI. Changes in Occupations and Implements.</td>
<td>53</td>
</tr>
<tr>
<td>A. Methods and implements in fishing under primitive conditions. Adoption of new methods and implements as a result of association with white men.</td>
<td>53</td>
</tr>
<tr>
<td>B. Methods and implements used in hunting under primitive conditions. Adoption of new methods and implements as a result of imitation of white men.</td>
<td>59</td>
</tr>
<tr>
<td>C. Attitudes of the Eskimo toward regulation of hunting and fishing activities.</td>
<td>64</td>
</tr>
<tr>
<td>D. Brief history of the introduction and development of the reindeer industry.</td>
<td>65</td>
</tr>
<tr>
<td>E. Limitations and possibilities of gardening as an industry among the Eskimo.</td>
<td>75</td>
</tr>
<tr>
<td>F. Development of miscellaneous occupations as a result of education. Summary.</td>
<td>77</td>
</tr>
<tr>
<td>VII. Primitive and Modern Health Conditions. Effects of changes of food, clothing, and habitations upon the health of the Eskimo. Some diseases as gifts from the white man to the Eskimo. Work of the Bureau of Education in improvement of health conditions among the Eskimo. Summary.</td>
<td>81</td>
</tr>
<tr>
<td>VIII. From the Eskimo to the English Language. Value of the Eskimo language as a means of communication. Limitations of the Eskimo language under the modern form of civilization. Work of the Bureau of Education in the academic training of Eskimo children. Value of the ability to speak, read, and write the English language as taught to the Eskimo children in government schools. Summary.</td>
<td>95</td>
</tr>
<tr>
<td>IX. From Shamanism to Christianity. Fundamental religious concepts among the primitive Eskimo. The relation of religion to the everyday life of the Eskimo. Part played by the &quot;shaman&quot; and his ritual.</td>
<td>103</td>
</tr>
</tbody>
</table>
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
</table>
| IX. (continued)  
The introduction of Christianity by missionaries. The mingling of two religions. Effects of Christianity upon the life of the Eskimo. Summary. |  |
| X. Primitive and Modern Social Relations.  
The tribe as the social unit. System of tribal government. Customs relative to family life. The "kashim" as the center of social life. Attitude of both old and young in regard to control of Eskimo by the United States government. Part played by the Bureau of Education schools in establishing social ideals and attitudes among the Eskimo. Summary. | 112 |
<p>| XI. Summary. | 124 |
| XII. Conclusions and Recommendations. | 129 |
| Bibliography. | 136 |</p>
<table>
<thead>
<tr>
<th>Number</th>
<th>Table Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Birth and Death Rate Among Eskimo, Indian, and Mixed Bloods. (1924 to 1927)</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>(This table is not in this copy, but was in the original submitted to the University.)</td>
<td></td>
</tr>
<tr>
<td>II.</td>
<td>Total Births and Deaths in Alaska. (1917 to 1921)</td>
<td>88</td>
</tr>
<tr>
<td>III.</td>
<td>Annual Birth and Death Statistics for Unalakleet. (1894 to 1927)</td>
<td>89</td>
</tr>
<tr>
<td>IV.</td>
<td>Annual Birth and Death Statistics for Quinhagak District. (1920 to 1928)</td>
<td>92</td>
</tr>
</tbody>
</table>
THE EFFECT OF EDUCATION UPON THE LIFE OF
THE ALASKAN ESKIMO

CHAPTER I

INTRODUCTION

The Problem Involved: The purpose of this dissertation is to give the results of an investigation to determine what effects education has had and is having upon the life of the Alaskan Eskimo.

Definition of Terms Used: In this study "education" is used to designate the influence exerted by representatives of the white race and white civilization upon the Eskimo. The individuals who have consciously or unconsciously engaged in this educative process may be generally classified as teachers, missionaries, doctors, traders, fishermen, trappers, and miners.

Method of Investigation: In order to determine the amount, method, and value of various changes which have taken place as a result of education, a comparison is made of primitive and modern conditions among the Eskimo of Alaska with
supplementary descriptions of the most important transitional stages of development.

Sources of Data: The material for this dissertation has been taken from the following sources: Reports of the Smithsonian Institution on Ethnological Investigations by various arctic expeditions among primitive tribes of Eskimo; reports by individuals conducting investigations under the auspices of the Canadian and Danish governments for the purpose of obtaining information concerning the habits, customs, and living conditions among the Eskimo; reports of the United States Bureau of Education on the progress of the work of that department in regard to its educational endeavors, its medical service, and its occupational training among the Eskimo of Alaska; and experience gained from four years residence and travel among the Eskimo on the part of the author while in the teaching service of the Bureau of Education.

Limitations of the Study: This discussion is limited to the Eskimo of Alaska for the following reasons: A thorough discussion of all Eskimo would involve too many problems to be adequately dealt with in a study of this type; other divisions of the Eskimo have a cultural development so different that it deserves separate discussion; and the work of the Bureau of Education, which has been one of the most important influences in the development of the Eskimo, has been restricted to the
Alaskan Eskimo.

Importance of the Study: Although reports of several explorers include valuable information regarding the Eskimo of Alaska, search has been made and no study has been found showing the development and changes which have taken place under the advantages and disadvantages of the various educational influences. Every year the United States, through the medium of the Bureau of Education in Alaska, spends large sums of money in the promotion of beneficial projects and in the suppression of those of harmful effect in an effort to improve the living conditions of the Eskimo in Alaska. Several missionary societies in the United States are also engaged in an effort to accomplish these similar objects through their representatives in Alaska. These forces, together with the influence of traders, trappers, miners, and fishermen, have effected changes in the life of the Eskimo which have required centuries to develop to the point shown in other civilizations.

This dissertation is an effort to determine what these changes have been, their causes, and the advantages and disadvantages to the Eskimo, with suggestions as to the other valuable changes which might be made in the future.
CHAPTER II

RACIAL TRAITS OF THE ESKIMO

Two distinct types of aborigines are known to have inhabited North America, the Indian and the Eskimo. The Indian, who formerly occupied the major portion of the continent, have been forced to abandon most of their territory for the use of the white man. The Eskimo still inhabit the western, northern, and eastern portions of North America from Bristol Bay in Alaska to the southern part of Labrador as they did before the coming of the white man. The majority of these people inhabit a narrow strip of territory along the coast. A few may be found as far as two hundred miles from the coast along the larger rivers, while others have scattered villages on the shores of a few large lakes and islands.

Although primitive Eskimo culture was quite similar among all tribes,¹ many variations have developed as a result of contact with civilization. The Eskimo of Greenland have

¹ Stefansson, V., My Life with the Eskimo, p. 196
adopted civilization under the guidance of the Danish government.\footnote{Hall, C. F., Arctic Researches and Life Among the Eskimo, p. 51} Those who inhabit the coast and islands of Canada have progressed but little except in scattered villages under the direction of missionaries.\footnote{Rasmussen, Knud, Across Arctic America.} During the last forty years the Eskimo of Alaska have been subjected to educational influences from many sources.

One of the best methods of determining the effects of an influence is to compare objects or individuals which have been influenced with those which have not. In order to compare Eskimo for the purpose of showing the effects of educational influence upon them, we may make use of tribal divisions. A brief description of the Eskimo may serve to introduce the reader to the main object of discussion in this dissertation.

Expeditions to study conditions among the Eskimo have learned much concerning their primitive living conditions. The Annual Report of the Bureau of Ethnology of the Smithsonian Institution, 1887-1888, consists mainly of the account of John Murdoch, Naturalist and Observer, of the International Polar Expedition to Port Barrow during the period from 1881 to 1883. This report and a similar one by the Smithsonian Institution, published in Part I of the
report for the year 1896-1897, which describes early
conditions among the Eskimo from the Kuskoquim River to
Norton Sound are offered as authority to support statements
of personal observations on the part of the author relative
to so-called "primitive states or conditions."

During the latter half of the nineteenth century, the
distribution of Eskimo tribes along the coast of Alaska was
as follows (see map on page 7): From Point Barrow eastward
approximately half way to the Mackenzie River, and from
Point Barrow westward and southward half way to Cape
Lisbourne, the territory was occupied by Utkiavigmiut and
smaller related tribes; from Point Clarence, the Malemute;
from Port Clarence to Golovin Bay, the Kaveramiut; from
Golovin Bay to the mouth of the Yukon, the Unalik; from the
mouth of the Yukon to Piaamuit, the Ikogamiut; from the
mouth of the Yukon to the mouth of the Kuskokwim, the
Magemiut (otherwise known as the Kusilvakamiut); from the
mouth of the Kuskoquim for two hundred miles up the river,
the Kuskooqoogamiut; from the mouth of the Kuskoquim to
Nushagak on Bristol Bay, many small villages of the same
general tribe as the natives of the Kuskoquim but having
separate names for each village.

Some exceptions to this classification are those natives
at Cape Prince of Wales, Port Clarence, and King Island,
known as Kinugmiut, and the people of St. Laurence Island
DISTRIBUTION OF ESKIMO TRIBES
IN ALASKA
and the Diomede Islands.

General statements concerning the physical characteristics of any race are likely to be untrue when applied to certain individuals of the race. It is possible, however, to describe the characteristics most commonly found which enable one to distinguish one race from another and to assign an individual to the race to which he probably belongs.

The Eskimo are a medium-sized people although extremes may be found among the Malamute who often reach 5 feet 10 inches in height with weight of 180 pounds, and among the Magemut who rarely exceed 5 feet 5 inches in height or 140 pounds in weight. Practically all Eskimo have a brownish skin, dark eyes, dark hair with a tendency to straightness and coarseness, broad and flat faces, flat noses, high cheek bones, large mouths with full lips, and bodies that are remarkably free from hair. I have seen some notable exceptions to all of these characteristics, but they were notable and noticeable because they were exceptions.

Most of the adults, especially the women, appear to be much older than they really are. A woman of thirty is generally already stooped and misshapen because of the poor posture attendant to her habits of carrying babies on her back and sitting on the floor to sew and to tan skins.
hands and face are roughened and seamed by the almost perpetual winds of a rigorous climate. All of the older people, except those who are exceptionally obese, have an intricate network of facial wrinkles. Inflammation of the eyes is prevalent among the individuals past middle age. It is difficult to determine whether this condition is a racial characteristic or is due to exposure to the cold winds and bright reflection from the snow. One of the most remarkable characteristics of the women is the exceptional flexibility of the body and limbs. This trait is demonstrated in the ease with which they habitually extend the legs flat to the floor without bending the knees while sitting and in the dexterity with which they remove their babies from their backs by lowering them spirally around the body.

Both men and women are well endowed with muscular strength and physical endurance, e.g., they often travel 20 to 30 miles a day on foot with large packs on their backs. Seal hunters frequently paddle their kayaks through rough seas for twenty-four hours without sleep while a fox hunter may follow a single fox trail constantly for two days. However, in spite of the hardihood evidenced in his daily life, the Eskimo is especially susceptible to diseases introduced by the white man. The common belief that the Eskimo is less vulnerable to cold than white men has no evidence to support it.
During the time previous to occupation of Alaska by the United States, the different tribes remained within certain general boundaries. This was made inevitable by the lack of transportation and communication facilities, by feuds and petty quarrels over fracture of tribal taboos, and by the lack of a central protective force. United States control with its law enforcement, education, and efficient facilities for communication has overcome many of these tribal differences to a great extent.

By establishing schools in all of the larger villages from Point Barrow on the most northerly point of Alaska to Kanakanak on Bristol Bay, the United States Bureau of Education has furnished a unifying force for the various Eskimo tribes in an unprecedented manner. By means of the two industrial schools (there is a third one attended by Indians) located at White Mountain on Morton Sound and at Kanakanak where the most promising pupils from each of the smaller schools are able to obtain special training, representatives of all the Eskimo tribes are brought together making possible an intermingling of tribes which is conducive to tolerance and removal of prejudice. The United States Mail service is another invaluable means of promoting friendly relations and erasing tribal boundary lines. Reindeer fairs and church conferences are also an incentive
to travel and exchange of ideas. Thus, points of contact and unifying forces of inestimable value have been established in recent years.

One of the outstanding examples of tribal fusion has occurred at Unalakleet on Norton Sound. This village was formerly occupied by natives of the Unalik tribe. During the last thirty years considerable migration from the northern tribes has brought so many of the Kaveramiut and Malerute into this village that the Unalik are now in the minority. Under primitive conditions these tribes were enemies. Although all three languages are still spoken, so much intermarriage has already taken place that practically all individuals have relatives in all three tribes. A similar miscegenation which is taking place among the natives of the Yukon and Kuskoquim rivers serves as another example of the tribal fusion which is occurring under the unifying influence of education. The value of such inter-marriage between tribes as opposed to inbreeding in the same tribe is still in dispute among biologists, but the cultural and economic value is quite evident.

SUMMARY OF CHAPTER I

RACIAL TRAITS

1. The cultural development of the modern Eskimo has
followed separate and distinct channels under the influence of the Danish, Canadian, and American governments.

2. Certain distinguishing physical traits are common among all tribes of Alaskan Eskimo.

3. Various educational influences have effected changes in tribal relationships by destroying tribal warfare, and establishing more efficient methods of communication, trade, and travel.
CHAPTER III

COMPARISON OF PRIMITIVE AND MODERN FOODS

In the preceding chapter on racial traits, an effort was made to introduce the reader to the Eskimo himself. In order to show the radical change which has taken place in the dietary habits of the Eskimo under the influence of the white man's efforts to educate him, it will be necessary to make a comparison of primitive and modern foods and methods of preparing them.

Before coming into contact with the white man, the diet of these people consisted almost entirely of meat and fish. The proportionate amount of any article of food in the diet depended, to a large extent, upon the supply available. The most plentiful article of food along the coast was the flesh of the hair-seal. In addition to its meat, which is still used and valued highly, this animal furnished oil and blubber. In order to obtain a supply of this valuable fat, the Eskimo living along the shores of lakes and rivers were forced to make annual trips to the coast. Some were able to purchase oil with caribou skins or wooden utensils brought
from the interior, while others remained on the coast long enough to hunt seals for themselves.

The walrus, white whale, and "bowhead" whale were also valued for their meat and blubber although the latter species of whale was rarely, if ever, found except along the northern coast. Although the flesh of the whale and walrus is exceedingly tough and coarse-grained in comparison to that of the seal, the thick skin of the whale (muktuk) was, and still is, considered to be a great delicacy among all Eskimo.

Fish was the principal article of diet among the Eskimo of the rivers and lakes and was also utilized to a large extent by the coast-dwellers. As some kind of fish may be found in the rivers and along the coast of Alaska at almost any time of the year, it frequently happened that this form of food was the only means of maintaining life during long periods of near-famine when other foods were not obtainable. Crabs were found at some places along the coast and were considered to be a great delicacy. The shells of the crabs were used as decorative objects in the houses after the meat had been removed.

Great numbers of ducks, geese, swans, cranes, and many kinds of smaller wild fowl were taken for food during the spring and fall migrations. If the game was exceptionally fat, some of the oil would be saved for use in times of
scarcity. During the nesting season which followed the spring migration, the eggs of all of the wild fowl were eagerly sought. Since no discrimination was shown concerning the stage of an egg's development, few were ever wasted. The term "strictly fresh" held little, if any, charm for the primitive Eskimo when applied to any kind of food.

According to the testimony of old Eskimo who had in turn quoted their parents, the mountain ranges and foothills along the coast of Norton Sound formerly supported vast numbers of wild caribou. Stefansson, in describing conditions among the tribes east of Point Barrow, states that the caribou were plentiful in that region as late as the year 1902. Owing to the occupation of St. Michael and Unalakleet on Norton Sound in 1833 and the consequent distribution of fire arms to the Eskimo of that region, the extinction of the caribou came much sooner than in territory where fire arms were not received until the purchase of Alaska by the United States. Practically all of the food value to be obtained from the caribou was utilized by the Eskimo. Every scrap of meat was carefully scraped from the bones while the bones themselves were broken open to obtain the marrow. As much of the reserve food supply of the animal was stored in the marrow, this form of food was especially rich and nourishing and, consequently, highly prized. During times of famine, the skins of caribou were mixed with oil and used
as food. The vital organs, intestines, stomach, and stomach contents were also used for food under conditions of plentiful food supply from other sources -- which shows that this form of food was eaten from choice and not from necessity.

All of the small land animals such as rabbits, squirrels, marmots, and porcupines have been hunted by both primitive and modern Eskimo for food, as well as the water animals such as the beavers and muskrats. Bears furnished excellent food when ways and means could be devised to kill them, while wolves, wolverines, foxes, and lynxes were killed and eaten in times of scarcity of other foods.

The many kinds of berries which grow on the tundra and along the banks of rivers were always eagerly sought as a means of varying the monotony of the flesh diet. Bulbous roots of grass growing near and in the lakes, as well as certain portions of the stems and leaves were also eaten in large quantities during the spring and summer when they were available. Willow buds and tender sprouts were sometimes eaten when other vegetation could not be had to supplement the flesh diet.

Several important changes have taken place in the dietetic habits of the Eskimo as a result of efforts on the part of white men to educate him in the ways of the white man's civilization. Practically every Eskimo village south of Point Barrow on the coast of Alaska now has access to
some trading post where most of the staple articles of food, which are included in the diet of the white man, may be purchased. The first foods obtained from the whaling vessels were generally of the "imperishable" type, such as tea, coffee, flour, corn meal, sugar, molasses, and rice. As the trading posts became more numerous and a liking for such foods increased, it became more and more necessary for the Eskimo to devote more of his time to hunting in order to supply the traders with fur in payment for the white man's food products. Thus it may be seen that the changes in the food habits of the Eskimo are closely related to the changes in occupation.

The most important change in the dietetic habits of the Eskimo has been due to the development of the canning industry. Owing to the difficulty of transportation and the heavy losses involved, few traders were willing to import fresh fruits and vegetables for the purpose of trade with the natives. But when scientific methods of canning foods had been perfected, no special care was needed except to prevent freezing. Because of the impracticability of canning, together with the exceptional food value involved, oranges, apples, and potatoes are shipped to Alaska fresh. Through observation, it was discovered that the best-liked foods were oranges and candy. The choice between these two would depend upon the relative size of the articles. (A
large orange would be chosen in preference to a small piece of candy, while a large piece of candy would be chosen instead of a small orange.)

Canned milk is used more widely and in greater quantities than any other canned food. Its use was introduced as an adjunct to coffee drinking and as a means for shortening the nursing period for small children. In imitation of the white man, the Eskimo has gradually increased his consumption of milk through using it as a beverage and as an ingredient in preparation of other foods. Canned tomatoes are now used to some extent in making soups by the Eskimo living in the more advanced villages. The importance of spinach in the diet of the white man has not yet been realized by the Eskimo except in a very few cases. They object to most canned foods on the ground that the price is usually too high to justify the purchase of so much water.

Although some of the traders realize that the success of their business depends to a large extent upon the purchasing power of the Eskimo, which in turn depends upon his health and ability to work, comparatively few traders take advantage of the splendid opportunity which is theirs to offer the Eskimo the white man's most health-giving foods.

One of the best methods of helping the Eskimo to obtain good wholesome food at reasonable prices is by the establishment of properly organized and properly managed coopera-
tively managed stores. This method has been utilized to
good advantage in several villages by the Bureau of Educa-
tion with teachers as supervisors, and by missionary
societies with missionaries as supervisors. These coopera-
tive stores are most useful as well as most successful in
villages which have no privately operated stores in the
vicinity to offer competition and divide the interest of the
community in support of the cooperative enterprise.

The adoption of certain of the white man's foods by the
Eskimo necessitated the adoption of some of the white man's
methods of preparing these foods. The adoption of new means
of preparing new foods also had some influence upon the
manner in which some of the native foods were prepared.

The Smithsonian Institution's report of 1887-1888
regarding the Point Barrow Eskimo corroborates my findings
regarding primitive methods of preparing and eating foods
among the Eskimo of Seward Peninsula, Norton Sound, Yukon
River, and Kuskokwim River.

All kinds of meat were generally cooked by boiling in a
generous quantity of water. If the blood of the animal was
available, it was used to thicken the water to form soup or
broth which was drunk hot before eating the meat. The
practice of burying surplus meat in the frozen subsoil in
times of plenty during summer months resulted in the con-
sumption of many meals of half-rotten meat during stormy
winter months when fresh meat was not to be found. There is no evidence to indicate that harmful results accrued from this practice. On the other hand, the testimony of several Eskimo in widely separated villages, to the effect that individuals have died during the last ten years from the effects of eating seal meat of animals washed upon the beach several days after they had been killed at sea, shows this to be a dangerous practice.

If an animal was killed near a permanent camp during the summer, the meat was cut into strips and dried for winter use. As all meat killed during the winter months immediately became frozen, no other method of preservation was necessary during this period. Very old Eskimo men and women say that raw meat taken directly from the animal was eaten only under circumstances which made cooking difficult or impossible. Dried meat was not considered to be inferior to cooked meat at any time, and it was especially adapted to use while travelling as it is much lighter than fresh meat and does not necessitate building a fire. Frozen meat was also eaten for variety and to save the trouble of fire building.

Fish was eaten boiled, dried, frozen, and raw in much the same manner in which meat was eaten except that larger quantities were consumed in the raw state. Eskimo children frequently eat a small species of fish called needlefish in such a manner that the fish is killed during the process of
mastication. The people of the lower Kuskoquim (Kuskoqnagamiut) dug large bottle-shaped holes into the frozen glacial muck along the banks of the rivers during the late summer. The openings to these holes were only about three feet in diameter in order to facilitate closing them with a piece of frozen sod for a lid. From the top downward, the holes would enlarge to five feet in diameter and six feet deep. These holes were filled with salmon during the rainy month of September when it was impossible to dry them. Before "the freeze-up" in October or November, this carefully buried fish would become partially putrefied. This semiputrefied salmon "tipuk" was formerly used as a regular article of diet and was considered to be a great delicacy if only king salmon heads were buried instead of the whole salmon. Its use is now confined to feeding dogs except in times of scarcity when Eskimos must choose between that and nothing.

Another form of primitive food which is falling into disuse is a combination of herring eggs and the seaweed to which they cling. This food, which was eaten raw, furnished a form of roughage in a diet that was markedly deficient in this element. The bulbous roots of certain kinds of grass were sometimes obtained for roughage during the summer by robbing the underground storehouse of field mice which had hoarded the roots for winter use.
The food which held first place in the estimation of the Eskimo under primitive conditions, and which retains much of its charm for the modern members of that race, consisted of berries, caribou fat, seal oil and snow. Due to the high place held by this food in the estimation of the Eskimo, it has been given the English name "Eskimo ice cream." In Eskimo it is "akootuk." At present the hard, white fat of the reindeer instead of the fat of the caribou is used in making this delicacy.

One of the most recent developments which has resulted in changing the food habits of the Eskimo is gardening. Unfortunately, the unfavorable climatic and soil conditions of many localities prevent the profitable cultivation of such common garden vegetables as may be produced in many villages on Norton Sound, Yukon River, Kuskokwim River, and Bristol Bay. The vegetables commonly raised in Eskimo gardens are: potatoes, turnips, rutabagas, carrots, cabbages, lettuce, and radishes. Other vegetables which can be raised are: spinach, chard, peas, celery, cauliflower, onions, and beets. The Eskimo confine their efforts to raising the vegetables in the first list because of the greater yield in food value in comparison to the amount of space required for growing. Methods used in cultivating Eskimo gardens will be thoroughly discussed in the chapter on Occupations and Implements.
The rapid development of the reindeer industry among the Alaskan Eskimo has given reindeer meat a place of enormous importance in the diet of these people. However, since the reindeer is in reality a variety of small domesticated caribou, the meat is so similar as to produce little if any change in regard to methods used in preparing it. Since the introduction of reindeer into Alaska has produced an economic rather than a dietetic change in the life of the Eskimo, the subject will be discussed in the chapter on Occupations and Implements.

SUMMARY OF CHAPTER III

FOOD

1. The food of the primitive Eskimo consisted largely of the flesh of sea and land animals and fish. This diet was varied at times with berries, roots, tubers, and certain kinds of grass.

2. Some of the white man's foods such as flour, corn meal, sugar, tea, and coffee have supplanted a large portion of the flesh foods. Some kinds of fruits (both fresh and dried) and canned milk have recently become popular as foods in some localities.

3. Flesh and fish are eaten cooked, dried, frozen, half-rotten, and raw. Foods introduced by the white man are
generally prepared in one of the ways used by the white men.

4. Gardening, which is only in its infancy, as an industry is already contributing enormously to the food supply of some Eskimo villages. The Bureau of Education teachers in cooperation with various missionaries, are responsible for the introduction of gardening among the Eskimo of Alaska.

5. The reindeer industry which was introduced into Alaska by the Bureau of Education in 1894 has already become an important source of food for the Eskimo, and is becoming increasingly important with the increase in the number of deer herds.
Chapter III dealt with the manner in which the Eskimo solves his food problems. Another of the obstacles encountered by the primitive Eskimo in the occupation of Alaska was the low temperature which commonly prevailed there during the winter months. A most important step in overcoming this obstacle was the construction of clothing from the skins of animals and birds. The kind of skin to be used was determined in most cases by the kinds of animals or birds which were most abundant and most suitable for the kind of garment to be constructed. The most important garment resembled a loose cloak in general pattern. The important differences were that it had no opening in the front, which is commonly closed by buttons on a cloak, and that a hood was attached to serve as a covering for the head. This garment which is called a "parka" or "parky" was put on by pulling it over the head in the same manner that a modern athletic jersey is put on by a football player.

Many kinds of skins were used for the construction of
parkas. Caribou skins could be obtained in great variety of warmth and thickness according to the size of the animal and the time of year when it was killed. The youngest fawns have the thinnest skins with soft downy hair. These were used to clothe the very young children to permit freedom of motion which would be impossible in the heavy winter skins. The skins of fawn and yearlings were considered to be best for making parkas for adults. The best time for taking these skins depended upon the severity of the climate which varies considerably in different localities. As the temperature is much lower in the interior of Alaska during the winter months than it is on the coast in the same latitude, the natives living along the rivers and lakes required much heavier skins for clothing than those who inhabited the coast.

The fur of the spermophile (tsik tsik), which is a small species of ground squirrel, was used extensively for parkas by all of the tribes inhabiting the mainland. Garments made from such fur combined all the qualities of warmth, lightness, beauty, durability, and flexibility. Although a squirrel garment was not as warm as one of caribou skin, two squirrel garments could be worn simultaneously to produce warmth without the cumbersome stiffness of the caribou skin garment. Among the Malemute of Kotzebue Sound, the "Kobuk squirrel" or "tsik tsikpuk"
was used to make very handsome as well as serviceable parkas. Skins of the arctic hare were used for parkas to some extent on the mainland. Although these garments were warm, they were not very durable on account of the extreme thinness of the skin. The relative scarcity of other fur-bearing animals made their extensive use as the main material for parkas impractical. For all of these parkas, the fur of the wolverine and the wolf was most commonly used as trimming around the hood as a means of protecting the face and as decoration. Wolverine was always in demand because of its peculiar ability to prevent the formation of ice around the face from the moisture in the breath.

The scarcity of fur-bearing animals on their islands and the plentiful supply of ducks combined to force the Eskimo of the Diomede Islands to utilize skins of the latter for parkas. These feather parkas were very warm, and would shed the rain. Their faults were that they were very fragile, they soon shed their feathers, and they were likely to be inhabited with bird parasites which would adopt the wearer of the parka as their new host instead of the duck.

Waterproof parkas were made from seal or walrus intestine which was split longitudinally and sewed in a spiral manner. These garments were worn by both sexes in rainy weather, by the men while on the sea in their boats, and by the women while travelling.
All other parkas of men and women differ in style, and
the general style in different localities also differs
somewhat. The garment worn by the men was cut even along
the bottom, while that worn by the women had a flap in front
and one behind. The flap reached to the knees or a little
lower and had rounded edges. The opening between the flaps
reached to just below the hips on either side. The parkas
of the men among the Kuskoquagmiut reached to the knees or
lower, while those worn by the northern tribes were cut in
such a manner that the bottom reached the middle of the
thigh. The women of all tribes invariably decorated their
parkas more than those of the men. The hood of the woman's
garment was enlarged to accommodate the head of the infant
which was commonly carried upon the back. This feature was
imitated in the dress of the girls whose garments were all
made in miniature of those of their mothers. Although the
method of decoration of clothing varied in detail in dif-
ferent tribes, the general pattern was remarkably constant.

Loosely fitting undergarments consisting of pantaloons
and shirt were commonly worn in primitive times by both men
and women. This underclothing was generally made from
short-haired caribou skins with the hair worn next to the
skin. Outer pantaloons of hair-seal or caribou skins were
worn during cold weather. The women often combined
pantaloons and boots into one garment while the men stuffed
the bottoms of the pantaloons into knee boots.

Many varieties of boots were formerly used to fit the changeable weather conditions. Caribou skin and seal skin with hair on served for boot material in the winter and with hair removed for summer boots. Socks of grass or short-haired caribou skin were worn inside the boots with a grass mat for added protection for the sole of the foot. The sole of the boot was generally of seal skin although caribou skin was sometimes used as a substitute. In order to protect the seams from wear, the soles were turned up all around and sewed to the upper with "crimping" at the heel and toe to retain the cup shape of the sole.

The difference in the sewing done by the women in various tribes is most evident in the construction of boots. The sewing of the King Island natives is markedly superior in respect to neatness and effectiveness, while that of the Magenius and Kuskoquagamiut is extremely slovenly and crude. These features are most evident in the boots made of dried fish skin which are used extensively by the Ikogamiut as well as by the Magenius and the Kuskoquagamiut.

Mittens and gloves, which were necessary for out-of-door occupations during the winter months, were made from caribou skin, dog skin, wolf, and seal skin and were worn with the hair either in or out. Mittens were often made large enough to be used as socks in emergencies when the...
feet became wet while on the trail in cold weather.

A new garment in an Eskimo family living under primitive conditions was not taken lightly, for it represented the combined efforts of both parents for a considerable length of time to effect its completion. After the animal was killed by the father or larger brother, the skin was taken off and dried. The next process was to tan the stiff skin by a scraping process until it became soft and pliable. Stone knives were then used to cut the skins to the proper pattern. Many different pieces were often fitted into the pattern to economize on the material. Although the caribou skins required much more time for the tanning process, they were much more easily sewed together than the eighty or ninety squirrel skins required for an adult's parka.

Although the same general process of handling skins is in use now that was used one hundred years ago, the change from stone scrapers to iron ones, from stone knives to iron knives and scissors, from bone needles and awls to steel needles that need no awls, has reduced the time and labor involved and resulted in the production of much improved clothing from the standpoint of utility and appearance.

Not only has the Eskimo retained the use of fur garments, but he has also taught the white man to use fur garments of the same pattern as his own. Experiments with many styles of coats and jackets have always ended in
reversion to the parka as the best outside garment. Many white people prefer the Lapland style of boot, which is made of reindeer legs for tops and either legs or head skin for soles, for use in extremely cold weather; but the Eskimo "mukluk" with reindeer-leg tops and smooth sealskin soles are the universally adopted footwear for average winter weather for both Eskimo and white people. Many white people prefer the old Eskimo style of using grass for insoles, while many Eskimo have adopted the use of felt insoles in their boots. Felt is more conveniently handled and lasts longer; grass is comparatively inexpensive and is warmer. Some people combine the advantages by using both at once.

Although some kinds of sealskin boots are supposed to be superior to our rubber boots on account of their light weight, the rubber boots are better from the standpoint of durability. Many Eskimo now wear rubber boots because they do not wish to give sealskin boots the care which is necessary to keep them waterproof, while many white men wear sealskin boots because they would rather pay to have them cared for than to wear the heavier rubber ones. Rubber boots are less likely to leak if used in water for long periods of time, but they also cause excessive perspiration and consequent weakening of the tissues which are not encountered by those who wear the seal boots.

Several pairs of manufactured canvas gloves are used
every year by each Eskimo above school age. Cotton and woolen socks and stockings are worn until the heel wears through, and then the hole is turned around on the top of the foot. When another hole appears, the side portions are utilized in the same manner. The sock or stocking is then cut off just above the four holes, the opening thus formed is sewed shut on a sewing machine, and the garment is ready for further use.

Cotton underclothing is worn by most of the Eskimo during the winter months, but it is often discarded during the summer. Most of this underclothing is purchased from the trader ready-made, but some of the poorer families make some underclothing from flour and meal sacks. Many men and boys wear overalls for trousers the year around, while some of the more successful hunters are able to afford woolen garments. Women and girls also wear overalls while fishing, driving dogs, or picking berries. Cotton dresses are purchased from the trading posts or made by the women with the help of their sewing machines. The poorer women, who cannot afford a machine of their own, frequently use one belonging to some neighbor or relative.

Individuals of all ages and sexes wear what is known as an "outside parka" (kashpuk). This garment is of the same pattern as the fur parka except that it is made larger in all dimensions. It is made of drilling, gingham, or calico,
and is either worn over the fur parka as a protection from snow, rain, dirt, and wear, or it is worn without the fur parka as a general purpose garment. Although the men usually wear kashpuks of khaki color, they often have a white one for use while hunting on the ice or snow in order to be less conspicuous against the white background. The women and girls prefer the fabrics containing the most elaborate designs and the brightest colors for making their kashpuks.

One of the less important changes in connection with clothing is concerned with the method and materials used in adornment. The efforts of primitive Eskimo to decorate their clothing often resulted in strange and intricate combinations and patterns. The chief means of variation was to combine several kinds of fur of different length, color, and texture into the same garment. Quite frequently other kinds of material such as black fish skin, red whale-stomach and brightly colored sinew were used to work designs along the seams between different kinds of fur.

The old custom of combining squirrel skins and white caribou skin is still in vogue except that the reindeer furnishes an excellent substitute for the caribou. Wolf and wolverine are used around the hood for trimming, and little strips or tails of wolverine are sewed in bunches on the breast, on the back, and on the shoulders. Many complicated
designs are wrought into trimming to be worn around the
bottom or inserted on the shoulders. The women no longer
wear their parkas cut into the double apron -- one before
and one behind. All women's parkas are now cut even around
the bottom to match their ready-made dresses. The only
parkas left of the apron style belong to the very old ladies
who are loathe to part with this old custom of their
ancestors.

Bright colored beads and yarn are now used to a large
extent instead of the red strips of whale-stomach to add
color to the trimming of boots and parkas. The best
trimming for the bottoms of parkas and the tops of fur
boots is now made from black and white calf skin, instead
of caribou or reindeer, as it has short glossy hair which
is more attractive than either of the latter articles and
is so durable that it can be used on several different
parkas or boots before it is necessary to discard it.

A curious mode of ornamentation which may be seen only
among the little girls of the Kuskoquagamut is the
practice of attaching the brass wheels of alarm clocks and
watches in conspicuous places on their boots and parkas.
The smaller varieties of wheels are also in great demand
for use as earrings in combination with blue and red beads.
The use of modern glass beads in the form of necklaces and
earrings has completely supplanted the practice of facial
tattooing and the wearing of stone and ivory labrets in the lips which was formerly a universal practice among all Alaskan Eskimos. The use of beads does not, however, extend to the men who have abandoned labrets and tattooing without substituting any new ornament except the necktie of the white man. He apparently tries to make amends for his loss of two forms of decoration by selecting the brightest colors for his one remaining head ornament.

Although education of the Eskimo in the ways of the white man is taking place in an exceedingly rapid manner, he is still far behind modern civilization in many respects. This fact is illustrated in an assemblage of Eskimo parents and children gathered together in a church or school to celebrate the holiday of Thanksgiving or Christmas with the children saying their "pieces," singing songs, and taking part in plays and tableaux in much the same manner that white children in the "States" do. The discrepancy appears in their clothing. Girls of all ages appear in dresses in the exact miniature of their mother's dresses as was the old Eskimo custom. If the mother was a pupil in the boarding school of a benevolent missionary society, her clothing is of the style that was worn by the missionary's wife when she left Seattle. If the mother tries to depart from the beaten path and fashion a new suit for her twelve year old boy, he may appear on the platform
to say his "piece" in a combination suit with the knee pants buttoned to the shirt. At one Christmas program, three boys and two girls appeared in suits and dresses in which pink was the dominant color with purple for trimming. Two of these children were from one family and three from another. The mothers, who were sisters, considered this display of color to be an exceptional triumph over the other mothers who had not been fortunate enough to obtain a reduction in the price of material by buying in large lots.

Although the peculiar manner in which the white man's clothing is often used and misused by the Eskimo is indicative of the incompleteness of the process of education in this respect, the fact that he uses such clothing as well as he does reflects considerable credit upon his educators. Not only has he learned to wear white man's clothing, but in many places where the Bureau of Education has had schools for a few years, he has learned to keep it clean. One of the points which receives great emphasis in these schools is that of cleanliness in respect to the body and the clothing which is worn upon it. Where facilities are lacking in the home, the schools are often used for bath-houses and wash-houses after school or on Saturdays.

Most clothing worn by the men is purchased ready-made from the trading post or ordered from a mail-order house
from the "outside." Some of the clothing for the women is purchased ready-made, but a greater portion is made by the women themselves. By giving one day of the week to instruction in domestic science and wood-working, the Bureau of Education schools are accomplishing results of a most utilitarian nature in the life of the Eskimo. The training which many girls received in these schools in the most efficient methods of making and caring for the clothing of themselves and their families is doing much to overcome the handicap of their isolation. The next generation of children will not be handicapped by clothing poorly adapted to their needs in respect to material, design, and color, since their mothers are the girls of the present generation who are now being educated in the Bureau of Education schools to deal with the clothing needs of a family. A clothing budget as worked out in one of the sewing classes of Eskimo girls at Quinhagak, Alaska determined that the clothing (except fur) necessary for an Eskimo family of six for one year is approximately $235 or eight foxes in Eskimo money. Under normal conditions, the expenditure of this amount for clothing is possible for any industrious family.
SUMMARY OF CHAPTER IV

CLOTHING

1. The same animals are used by the modern Eskimo as were used by the primitive Eskimo for making clothing with the exception of the substitution of reindeer for the wild caribou.

2. The methods used in making primitive clothing have changed but little, but the primitive implements have nearly all been abandoned for the more efficient implements of the white man.

3. The styles of the fur clothing such as are still worn by the modern Eskimo are quite similar to the primitive styles. The use of many of the garments worn by the primitive Eskimo, however, has been abandoned for many of the garments of the white man, both style and material. The white man’s wool and cotton garments are cheaper and more serviceable than the old-style fur garments.

4. The Eskimo is often unwise in his selection and use of the various garments purchased from stores and mail-order houses. This condition is rapidly improving under the educational influence exerted by teachers, nurses, and missionaries.
CHAPTER V

COMPARISON OF PRIMITIVE AND MODERN HABITATIONS

The rigorous climate of Alaska which necessitated a peculiar type of clothing also made it necessary for the Eskimo to have a variety of dwellings to fit changes in weather conditions. The habitations of the primitive Eskimo were of three types: permanent underground dwellings for winter use, temporary dwellings of snow for winter use, and temporary summer dwellings -- usually in the form of skin tents.

Changes in patterns, materials, and methods of construction of habitations have been most rapid and radical in the villages in which missionaries and schools have been located. The value of such changes in the living conditions of the Eskimo may be shown through a comparison of primitive conditions, or conditions where schools have only recently been established, with conditions in the villages in which schools or missions have been operated for at least twenty-five years.

Practically all primitive Eskimo lived in some perma-
nently located village during the winter months and many of them had underground dwellings of their own called "igloos." Those families which did not own an igloo generally lived in the same house with relatives.

The work of constructing an igloo sometimes fell entirely to the family which was to occupy it, but this did not occur unless the builders were in disfavor for a breach of tribal taboo. Generally an "igloo-raising" was a kind of social event participated in by the whole village.

The first step in the construction of an igloo among the Utqiaġvikut consisted in leveling the ground for the floor. This part of the work often necessitated a considerable amount of excavation as the villages were frequently located on the cliffs along the beach or among the hillocks a short distance from the shore. The walls were formed by erecting vertical timbers in such a manner that the ends were between three and four feet high, while the sides sloped up to form an angle for the ridge-pole which was always placed slightly to the rear of the middle of the floor space. This arrangement allowed the window to be placed somewhere near the center of the roof. When the house was occupied, the window opening was generally covered with a translucent membrane made of seal intestine sewed together in the same manner as is used in the
construction of the water-proof parkas. When the house was vacant in winter, the opening was covered with a wooden cover. In summer it was left open to prevent the interior from becoming overly damp and musty. The timbers for the roof were supported at the top by a stout ridge-pole and at the lower edge by the short upright timbers of the wall. The cracks were then filled with grass or moss to prevent the soil from falling into the interior of the dwelling. An underground passage about 25 feet in length served the double purposes of entrance and kitchen. Since this tunnel was rarely over 4 feet in height and 3 feet in width, it was necessary to maintain a stooping position while traversing it. The cooking and storage space was created by slightly widening the passage at various points. After completion of the wooden framework, the structure was completely covered with sod and soil except for the window in the roof and the hole at the entrance.

The winter igloos of the Malemiut of Kotzebue Sound and the Unalik of Norton Sound were constructed upon the same general plan as those of the Utkiaviganiut but were different in some respects. The igloos were more in the form of "cellars," since a considerable amount of excavation was done in order to have the floor about four feet below the level of the ground. Posts of driftwood from the beach were erected at strategic points in the
floor space to support the wooden framework. The walls were slanting inward to rest upon several beams which were in turn supported by the upright posts. The entrance was built in the form of a storm-shed on one side of the igloo proper. One descended by a wooden ladder or by earthen steps from the storm-shed directly into the main room. In this respect the igloos of the Utqiavmiut were just opposite from those of the Malemute and the Unaliq. Since there was but little room for cooking or storage in the storm-shed entrance, the cooking was done on an open fire under the window in the roof which could be opened to serve as a smoke hole or chimney. Since it was also a common practice to use spruce boughs for floor covering and for bedding, this custom of having a fire in the middle of the room frequently resulted in destruction of the igloo by sparks from the fire igniting the dry spruce needles.

The Eskimo of the Yukon and the Kuskoquim country used the same method of constructing igloos as the Malemute except that they did not excavate for the floor. This was due in part to the condition of the soil which was often so damp and frozen that an underground igloo would be impractical. The Eskimo inhabiting the delta regions of these two rivers were also frequently handicapped by the lack of suitable timber to construct strong and durable igloos.
A universal feature of all large Eskimo villages was the community house (kashim). This building was constructed in the same manner as the winter house except that it was much larger. The actual size depended in most cases upon the population of the village. Since this building served as shelter for all community gatherings and as workshop and sleeping quarters for many of the men, it was without a question the most important structure in the village.

Although few if any log cabins have been built by Eskimo without the influence of the white man, it has not always necessarily followed that log cabins always spring up in Eskimo villages with the white man's house as an example. In order to inhabit a log cabin in the winter, it is necessary to have not only the logs to build the house itself, but it is also imperative that one have an ample supply of wood (or some other fuel) to heat the interior. The village of Hooper Bay¹ is located south of the mouth of the Yukon River in a region which is devoid of timber. Since the ocean current flows northward from this village

¹ A picture of the crude dwellings of this village is given in the National Geographic, vol. 53, Jan. 1928, p. 127.
past the mouth of the Yukon, none of the wood which comes
down that great river every year ever comes south of its own
accord except by some freak action of the wind and tide.
Practically all that does come is needed for building and
for implements so that very little is left for fuel. Until
the fuel problem is solved, the natives of Hooper Bay will
continue to live in their underground igloos.

The missionaries and teachers at the village of
Quinhagak near the mouth of the Kuskoquim River have taught
the Eskimo to build cabins from logs and from lumber which
is obtained from villages farther up the river or is shipped
from Seattle. These houses are heated with small sheet-iron
stoves which burn willows for fuel. The willows grow along
the small river which flows past the village. Because of
the incessant cutting which has taken place in the last few
years, the nearest willows over two inches in diameter are
now six miles from the village. In the very near future,
this village must either find a new fuel supply or go back
to living in igloos which require less fuel for heating
purposes.

Many villages along the Yukon and Kuskoquim rivers have
a permanent fuel supply in the standing timber which lines
the banks of those rivers for miles. In order to preserve
this natural forest, which is one of Alaska's richest
resources, the Bureau of Education schools give considerable
attention to the study of forestry conservation. As long as the forests along the rivers remain, the vast number of trees which are inundated every spring by the change in the river's course will continue to be borne down on its current to be cast upon some sea beach in the form of driftwood. When these forests are destroyed, not only those who inhabit the river villages will suffer, but the coast dwellers will also be deprived of this valuable building and fuel supply.

Some villages have access to both standing spruce timber along a river and driftwood along the sea beach. Such a village is Unalakleet on Norton Sound at the mouth of the Unalakleet River. The exceptionally desirable features of many kinds have resulted in migration of Eskimo from both directions along the coast to settle at this point. All of the 230 inhabitants of this village live in cabins. Most of these cabins are of logs, while some are of logs covered with lumber. Some of the cabins still have roofs of sod, but the majority of them are roofed with corrugated sheet-iron or shingles. All of these houses have glass windows in the ordinary sized window frames. Many have their walls covered with a combination of oil cloth and paper which can be tacked to the lumber of the wall (no one has plaster walls), while two of the most energetic workers have purchased enough "beaver board" from the trader to cover
the interiors of their cabins. Most of the houses have only one room. This room is large or small according to the size of the family which occupies it. Some cabins are as small as 12' X 15' X 6', while the largest one-room cabin in this village is 18' X 24' X 8'. Some of the most recently built cabins have two or three rooms of small dimensions. Even the smallest of the cabins has a storm shed or vestibule through which one must pass in order to enter the house. This space is still used as a place of temporary storage to such an extent that it is frequently necessary for one to move snowshoes, dog harness, or buckets before gaining an entrance.

The remarkable progress of this village in respect to methods and materials used in constructing their permanent dwellings is not the result of an accidental imitation. It has been accomplished only through the constant and continued effort on the part of Bureau of Education teachers and missionaries who have cooperated to improve the living conditions at this place.

This village is not cited as an example of perfection. There is still much room for improvement. It is, however, an example of what education has done in effecting valuable changes in Eskimo habitations. If other villages have not advanced so rapidly, the reason may often be found in lack of natural resources. In order to overcome this
difficulty, the Bureau of Education has offered assistance to the Eskimo by which he may establish a village upon a more desirable site. The village of Noatak, which is 80 miles north of Kotzebue on the Noatak River, is located upon an admirable site which was established in 1908 in the following manner. Two tribes, which formerly lived one at the upper and one at the lower end of the river, were moved from their old locations where they were suffering hardship, to this new country which is rich in game, fish, and timber. The King Island Eskimo were also offered the opportunity of migrating with the help of the government, but they preferred to stay on their barren, rocky island and to live in their walrus-hide houses where they have an abundance of seal and walrus, rather than to risk living elsewhere under conditions to which they were not accustomed.

The snow igloo, which is commonly used among the Eskimo of northern Canada as a winter dwelling, was known to the Eskimo of Alaska only as a temporary shelter while travelling or as a store-house. Since this form of dwelling was not used extensively except in places where wood was not plentiful, it is reasonable to assume that it was used because of necessity and not because of any inherent advantages of snow houses over underground houses.
Upon rare occasions, the underground igloo was used as a summer house. This sometimes happened if the igloo was located upon high ground in such a manner that it would not become flooded during the summer rains or if there was no material with which to make a summer house. Most families moved out of their winter igloos into tents as soon as seal-hunting and fishing began. The moving from the winter to the summer camp and from the summer camp back to the winter camp was decided by several conditions. The early or late appearance of the change in the season was often the most decisive factor, while the food supply and the personal whims of the individual often carried considerable weight. The presence of the last-named factor usually meant that the moving-time of a large village would be from early April to the latter part of May. If the moving took place during the early season, much of the household goods was transported by dogteam, while those who moved last did their hauling by boat. Although transportation by boat involved less labor, it also meant that a part of the sealing season would be lost and the seal catch consequently smaller.

The ordinary summer house was a tent of seal or caribou skins stretched over poles. These tents varied in shape and size to suit the needs of the occupants. Most tents were conical or dome-shaped, while others were merely the
skin boats turned up-side-down with a prop under one side to afford an entrance. An advantage of the inverted boat tent was the ease with which it could be moved from one point on the coast to another in case the owner became dissatisfied with any particular location. The twenty-foot skin boats (called "umiaks") of the King Islanders are used in this fashion upon the beach during the summer in Nome. These large skin boats of the King Islanders are the only ones of this kind which are still used to any great extent. Owing to the scarcity and expense of the skins, the use of these boats has been supplanted in most places by the use of wooden boats of the various kinds used by white men. The skin tents are just as rare as the skin boats. They have been abandoned for canvas tents which are cheaper, lighter, more durable, and more pleasant to live in. Many of the tents are of the ready-made variety which are erected with an upright at each end to support the ridge-pole. Others are made from various kinds of canvas and drilling by the women with the help of their sewing machines. The advantage in making one's own tent is that a large tent may be made for the same price that a small one may be purchased ready-made. This is accomplished by using very light material. The Eskimo does not seem to realize that the better grade of material obtained in a more
expensive tent would mean a much longer life for the tent
and a great saving in the time and labor involved in
constructing two or three poor ones.

While travelling along the coast and rivers of Alaska,
one frequently sees a few wooden frames such as would be
represented by a child in his drawing of a house. These
are constructed by the Eskimo at the sites of their summer
fishing camps to serve as framework for their tents.
Boards are placed around the bottom of the frame touching
the ground and reaching about a foot above it. This
arrangement serves the double purpose of keeping out the
mosquitoes and acting as a substitute for tent stakes.
Some of the more energetic natives fit their tents with
screen doors for convenience and as added protection
against the mosquitoes. Others erect a small tent of
mosquito netting or muslin over their beds at night to ward
off the attacks of swarms of these pests which infest
practically every part of Alaska during the summer months.
Under primitive conditions, the only protection to be had
against the mosquito was to cover the body completely with
skins or to remain in the dense smoke from a fire of green
or wet wood. It is difficult for one to realize the value
of the mosquito net to the Eskimo without having had
personal experience in fighting a horde of mosquitoes
without protection for the face. The canvas tent,
permanent tent frame, screen door, and mosquito net have all been adopted by the Eskimo as a result of his association with the white man.

Many forms of Eskimo dwellings from the most modern to the most primitive now exist in some part of Alaska. The one article which is found in all winter houses and in many summer houses is the stove. A popular kind of stove now in use in many fishing camps in summer and in trappers' and reindeer herders' camps in winter is made from one or more five-gallon gasoline or kerosene cans with a stove pipe made in proportion and of the same material. Between this most simple type of stove and the great, nickel-plated, cast-iron range of the Eskimo who keeps a "roadhouse" for mail carriers and travelers, there is an endless variety of sizes, shapes, and materials used in the newly-acquired art of stove-making.

Many ingeniously constructed devices have resulted from experimentation on the part of the Eskimo, but the recent changes which have been so important in respect to heat, light, ventilation, and shelter have all developed as a result of patterns received by him through the instrumentality of the white man.
SUMMARY OF CHAPTER V

ESKIMO HABITATIONS

1. Limitations as to building material and adequate heating devices forced primitive Eskimo to live in an underground house in winter and a skin tent in summer.

2. The snow igloo was never used as a permanent dwelling and is used at present only in emergencies.

3. Through the introduction of new materials and methods of building by the white man, the Eskimo has been able to adopt the white man's type of habitations.

4. Not only the house of the Eskimo has been improved through his education by members of a more advanced civilization, but many new devices have also been adopted which make the Eskimo's house a more comfortable place in which to live.
CHAPTER VI

OCCUPATIONS AND IMPLEMENTS

Having now discussed the food, clothing, and dwellings of the Eskimo with comparisons of primitive and modern methods, it will be interesting to observe the relatively important changes which have taken place in the Eskimo's occupations and implements. The members of a single energetic Eskimo family living under primitive conditions were able to perform all of the occupations and possessed all of the important implements known to the tribe of which the family was member. This is true of the modern Eskimo with the exception of a few men who have specialized in the occupations of reindeer herding, trading, clerking for white traders, sled and boat building, ivory carving, and dogteam transportation. The majority have merely acquired new methods and new implements while pursuing their former occupations of hunting and fishing.

The abundance of many kinds of fish along the coast and in the rivers and lakes of Alaska determined centuries ago
that an important occupation of the Eskimo was to be fishing. The development of efficient implements with which to take advantage of this rich food supply was undoubtedly of great importance to the success of the Eskimo in maintaining himself under numerous adverse environmental conditions.

A most simple yet important implement for fishing consisted of a bone or ivory hook attached to a line of sinew or whalebone. A combination lure and sinker of ivory was inserted in the line from two to four inches above the hook. These hooks were used for fishing through holes in the ice or in tide-cracks. This method of fishing through the ice is still used extensively, but the materials used for the making of hooks and lines are greatly changed. Many hours were formerly required by a skilled workman to make a bone hook and a whalebone line; whereas metal hooks are now quickly and cheaply fashioned in manual arts classes by a school boy using wire or knitting needles, and a ball of string purchased from the store for a few cents will furnish enough fishing lines to last a lifetime. An Eskimo thus equipped can catch in an hour, through the river ice in October or November, enough small fish called tomcod, to fill a bushel basket. An unusually ambitious Eskimo sometimes uses two hooks with four prongs each; he often brings up three tomcods at once.
Gill nets which were laboriously fashioned from caribou sinew or whalebone were used by the primitive Eskimo in fishing. The process of twisting the sinew or splitting and tying the whalebone string often required several weeks of careful work, while the actual weaving of the net could not be done by a skillful weaver in less than a week. The labor and material required for the construction of one net of this primitive type would be worth the cost of several modern nets of linen or cotton twine which would be many times as durable and efficient. The Eskimo who wish to economize or who wish nets of a particular proportion still weave their own nets from cotton or linen twine purchased from the trader; others admit that ready-made nets are just as good as they can weave for themselves and that a ready-made net can be purchased almost as cheaply as the twine which is required to make one of the same size.

When only primitive sinew and whalebone nets were used, a family was considered fortunate which had two or three nets twelve or fifteen feet in length. If a family had only one net, it could catch only one or two kinds of fish. Because of this limitation, two families which had only one net apiece would agree to have nets of different size meshes. By this arrangement, each family could have a greater variety of fish food. Since the different kinds of
fish "run" at different times of the year, both the nets would rarely be in use at the same time, but both families would have fish when either net was in use. Now that nets are so cheap, the poorest family can afford to own two or three nets while the most prosperous families sometimes have eight or ten -- or more if they care to take the trouble to preserve the surplus fish thus caught.

Seines were made in the same manner as the gill nets, and were used in many places along the coast and in the lakes and rivers for catching fish in the summer. The gill nets could be used in winter by fastening the ends of the net to a line running under the ice between two holes. In order to take the fish from the net, it was necessary to pull the whole net through one of the holes. The net was reset by pulling upon the line which connected the two holes under the ice. Owing to the great danger of losing the net, this method was used only in times of food scarcity. Because of the greater efficiency of the new methods and materials introduced by teachers and missionaries, winter fishing with nets has been totally abandoned in many places.

The old practice of building a fish trap across a shallow place in a river is still in use, although wire netting is now generally used in constructing the dam and trap instead of the old method of driving narrow stakes of spruce into the bottom of the river. Even if the trap is
lost by being carried away in the ice in the spring, the increase in efficiency of the trap more than pays for the wire.

Many of the Eskimo living along the Yukon and Kuskokwim Rivers have learned from teachers, missionaries, and white fishermen how to build fish wheels. Since one fish wheel frequently supplies as many, if not more, fish than the owner can preserve, the use of nets is less frequent by those who have adopted the use of this new device.

The most common method used by both Eskimo and white men for preserving fish caught during the summer is by drying. A very important part of this process, and one which involves considerable labor, is that of cutting the fish in a manner to facilitate drying. If this part of the work is poorly done, the fish is destroyed by decay or by the larvae of a fly which takes advantage of every opportunity to lay eggs in cracks and crevices of fish or meat which are not exposed to the sunlight.

Many different methods are used in cutting fish for drying. The purpose of all methods is to expose the greatest amount of surface with the least amount of labor. Because of the excessive amount of oil contained in the king salmon, this fish is usually dried with smoke. Along the Yukon and Kuskokwim Rivers and along the coast south of the
mouth of the Yukon, most other kinds of fish are dried with smoke because the summer months are too rainy for efficient air drying.

Because of the difficulty involved in making equipment, the primitive Eskimo caught and preserved but a small amount of fish in comparison with the Eskimo of today. Modern metal hooks made in the schools are unquestionably better than primitive ones of bone, sinew, and whalebone. The use of cotton and linen thread instead of sinew and whalebone for net and seine making has resulted in better nets and seines for less labor. More efficient and cheaper fish traps are now constructed from wire netting than were formerly made from spruce staves. The fish wheel, the efficient device now built by the Eskimo under the instruction of Board of Education teachers, was unknown to his primitive forebears. In most large villages ordinary steel butcher knives are now used to some extent in place of the old knives of stone. However, many of the Eskimo women prefer to have their knives of modern material but in the old half-moon pattern. The half-moon shaped knives are now made by Eskimo men from old hand-saw blades with the tools borrowed from the Bureau of Education workshop. With all of these new methods and devices for catching and preserving fish, the Eskimo of today not only stores up an ample supply of fish for himself, his family, and his dogs, but he also
sells some to the trader, some to winter travellers, and
some to the mail carriers to feed their dogteams. All of
these improvements have resulted from the constant efforts
of teachers and missionaries who have been striving to
improve the living conditions of the Eskimo.

From the middle of May to the end of September, most of
the rivers of Alaska are free from ice. During this period,
the Eskimo spends most of his time in fishing and storing
fish, but as soon as the ice covers the rivers, fishing
becomes a secondary occupation and hunting becomes of
primary importance. The small rough seal was in primitive
times, and still is, the most important sea animal hunted by
all coast-dwelling Eskimo. It is especially valued for its
flesh and oil while the skin is used in innumerable ways
other than in clothing. Although the great bearded seal is
less common than the small rough seal, a single specimen is
worth many small seals on account of its valuable hide,
which is used for boat coverings, boot soles, and lashing
for sleds and snowshoes.

In order to hunt seals with any degree of success, it
was necessary for the primitive Eskimo to travel upon the
sea ice and upon the water which separated the ice fields
and floe ice. This was accomplished by the invention of a
boat for water travel and a sled for travel on the ice.
When either was not in use, it was placed upon the other and carried along. The sled was of very simple construction with runners of light spruce driftwood shod with ivory or bone. As it was rarely over four feet long and twenty-four inches wide, it was easily carried on top of the boat during water travel. Although the boat was four times as long as the sled, it could easily be hauled by lashing the sled under the middle to maintain proper balance. The dimensions of this type of boat, called a kayak, vary from fourteen to eighteen feet in length, from eighteen to twenty-seven inches in width, and from twelve to eighteen inches in depth according to the custom of the tribe to which the owner belonged.

The general plan of construction resembled that of a modern canoe with the top covered over and slightly arched to shed waves and spray. The framework which was formerly made of driftwood and lashed with seal skin thongs is now frequently constructed from select spruce lumber and lashed together with cotton twine. The only opening in this boat is the circular hole in the top, slightly back of the center, for the occupant. The diameter of this hole is the same as the width of the boat. Most of the coast-dwellers still use five skins of the bearded seal for covering their kayaks. A few of the coast-dwellers and nearly all of the river people now use heavy canvas for the covering. When
the canvas is painted, the boat is water-proof and much lighter than the skin boat. In spite of these advantages, the older hunters of the coast prefer the skin boat. Their reason is that the canvas is more easily pierced by the ice than the seal skin; and, therefore, the canvas boat is often unsafe. No evidence has been found, however, to show that more lives are lost in canvas boats than in skin boats. The most ardent supporters of the use of seal skin coverings admit that the greatest danger to life is from lack of skill in handling the boats and correctly interpreting weather indications and not from fragile boat coverings.

The reluctance of many hunters to recognize the superiority of canvas boat coverings does not carry over to the use of the modern rifle. No modern seal hunter ever attempts to hunt seals without a rifle, except in an emergency. Whereas the primitive hunting was done with a harpoon as the main weapon, these harpoons are now used largely to prevent a seal from being lost after it has been shot with a rifle while swimming. As soon as possible after a swimming seal is shot, the hunter strikes with the harpoon. When the harpoon strikes, the barbed point is disengaged from the end of the shaft but remains attached to a line which was wound around the shaft. If a seal sinks or is merely wounded, the line unwinds and the floating
shaft is picked up by the hunter. (The use of an inflated seal skin which was formerly attached to the harpoon line to prevent the escape of the seal has now been generally abandoned, for the seal which is killed or seriously wounded with a rifle has little opportunity for escape.) The hunter then winds in the line with the seal attached. If the seal is small, he may place it on top of the kayak, but if it is a large bearded seal, he must tow it in the water to shore or to an ice cake where it can be skinned and cut into pieces small enough to go inside the kayak. With modern steel butcher knives, skinning and cutting the seal into pieces takes but a short time compared to the time required by the laborious process involved with the use of a crude stone knife.

The walrus is hunted in much the same manner as the seal except that the skin boats (umiaks) used are eighteen to twenty-five feet in length, five to six feet in width, three to four feet in depth, and had no top covering. Owing to the greater size of these boats, several men are required to operate one of them. The harpoons and lines are also necessarily heavier and stronger to meet the strength of the walrus. Because of the great weight of the walrus, the skinning and cutting always takes place upon the ice unless motor boats are available for towing them to shore.

The increase in hair seal hunting as a result of the
demand of white people for clothing has not been great enough to effect any great change in the life of the Eskimo. Although the walrus is hunted to a greater extent than formerly for the ivory tusks, it is difficult to determine whether the number of animals killed annually has increased, since the walrus is not so eagerly sought at present as a source of food. Now that the Eskimo has incorporated so many of the white man's grain and vegetable foods into his diet, it is no longer necessary to consume such large quantities of game.

Many simple trapping devices such as the "bent tree snare" and the "figure four" dead fall were used by the primitive Eskimo for catching small fur-bearing animals to furnish trimming for their clothing. Since most of these devices have been widely used by other primitive hunting peoples, the Eskimo deserves little, if any, credit for their invention. However, at least one peculiar device, used for catching wolves and polar bears and which was dependent upon low temperatures for its operation, originated among this people. It consisted of a stout rod of whalebone about two feet long and one-half inch broad with a sharp point at each end. This rod was first bent into the form of a "z" or into a helical shape like a clock spring. It was then wrapped in a piece of whale or seal
blubber and tied into a compact mass with a piece of sinew. After the blubber had frozen solid from exposure to low temperatures, the sinew was untied. Several of these balls would be dropped where wolves or bears could find and eat them. The heat of the animal's body would soon thaw the blubber and release the springs of whalebone to pierce the entrails. Upon revisiting the place the next day, the hunter had only to follow the tracks a short distance to find the dead wolf or bear. Some of these rods would be lost by being carried away by foxes which ate the blubber bit by bit without injury to themselves, but those eaten by a wolf or bear could be recovered and used again. Practically all of these primitive trapping devices have now been abandoned since the Eskimo has been instructed in the use of the steel trap and the rifle.

The laws which have been passed for the protection of the valuable fur-bearing animals and the waterfowl were enacted to prevent the complete destruction of these valuable natural resources. By means of community meetings held in the Bureau of Education school buildings, the teachers and game wardens have tried to explain to the Eskimo that it is to his benefit to obey laws protecting animals during breeding season and when the fur is not prime. There are a few individuals among the Eskimo who object to these laws upon the grounds that such laws
interfere with their rights as aborigines, but the majority of the hunters comply with the laws unless they are induced by unscrupulous traders to hunt or trap out of season.

While the fur trade has retained its importance as an occupation developed by the white traders among the Eskimo, another industry has not been so fortunate. For twenty years the pursuit of the "bowhead" whale in the vicinity of Point Barrow brought enormous profits to both white traders and Eskimo hunters. With the invention of a manufactured substitute, the whalebone lost its value and hunting whales for whalebone was no longer profitable. Although the Eskimo still hunts the whale for its food value, whale hunting is no longer important as a major occupation.

Less than one hundred years ago, according to the testimony of several old Eskimo, the caribou was the most valuable and most numerous of all the animals hunted; consequently, it was so relentlessly and intensively hunted that it disappeared from the coast region entirely.

Although the United States government assumed control of Alaska too late to save the caribou by passing protective laws, it did the next best thing by educating the Eskimo in the methods of caring for reindeer. Through the efforts of Sheldon Jackson, the first Commissioner of Education for Alaska, 1280 reindeer were imported from
Siberia to Alaska at governent expense between 1892 and 1902. To teach the reindeer industry to the Eskimo people, about fifty Lapps from Norway were induced to migrate to Alaska. Eskimo youths learned the reindeer business by serving four years apprenticeship under instruction by a Lapp. These apprentices received deer in payment for their services. At the end of the four years, the graduated apprentice in turn taught Eskimo apprentices. Having fulfilled their contract, the Lapps have turned their attention to raising herds of their own and, in many cases, have become prosperous in this industry in which they are vitally interested.

The 1280 deer imported thirty years ago have increased to 321,116 according to the latest survey in 1928. Eskimo own 240,000 of these deer. A herd normally doubles every three years. In sections of the country where there are natural barriers of rivers and mountains such as form the boundaries of the Unalakleet range, the only necessary expenditure of time and energy is that required for the annual marking. Feeding gratis upon the plentiful tundra moss and requiring only the shelter afforded by their warm coats, the deer produce a clear profit of 33 per cent annually.

In most sections of the coast where several herds are upon contiguous ranges having no natural barriers, it is
necessary to keep herders with the deer to prevent them from straying. This adds to the expense of deer raising, but it also affords an opportunity for the training of the young men in the methods of deer handling which might be neglected if constant herding were not necessary. If all herds are not constantly watched, they must at least be "rounded up" from the hills once a year to be counted and to have the unmarked deer properly apportioned among the various owners.

One of the first stations established by the Bureau of Education for training Eskimo in proper methods of caring for reindeer was at Eaton, which was located eight miles from the coast on the Unalakleet River. The reindeer herd which ultimately developed from the establishment of this station later became the valuable property of the inhabitants of the village of Unalakleet at the mouth of the river. Of the seventy-five owners of this herd of deer there are sixty-three Eskimo, six Iaplanders, and four white people. The Bureau of Education and the Swedish Mission also own deer in the herd.

The method of marking and counting this herd is that which was devised by Mr. Laurence Palmer of the United States Biological Survey. Since all herds under government supervision now use this system, a description of a
"marking" at Unalakleet would illustrate the general procedure of this important phase of reindeer husbandry.

During the last week of June, 1927, four Eskimo, two Lapps, and six herding dogs left Unalakleet to start the annual round-up of 13,000 deer, which were scattered over a mountain range 55 miles long. Three men with dogs went southward along the coast to the Golsovia River, while the other men and dogs went eastward along the Unalakleet River to its tributary, the Shirosky River. At these points, the two separated into smaller groups consisting of one man and one dog. All groups then began to drive all the deer they could find toward the center of the range. Fifteen days after the herders left the village, an Eskimo weary and dirty from tramping over treacherous "nigger heads" and sucking swamps, arrived to inform the villagers that the round-up was completed and that the herd would arrive at the reindeer camp the next day. Immediately the village was thrown into the happy confusion of the annual exodus to the reindeer camp. Although the site of the corral was only five miles down the coast from the village, the eight or ten days spent there were welcomed as a kind of picnic.

The whole camping outfit, dogs, children, and supplies could usually be moved in one trip in the family kayak. An incredible amount of cargo can be drawn forth from these small boats like things out of a magician's hat. Tent,
stove, bedding, clothing, nets, bundles of dried salmon, three or four children and as many dogs come forth magically from the center opening.

About one thousand deer were separated from the main herd as the first day's marking allotment. At this season of the year the deer were shedding the velvet which hung in waving festoons from their antlers. Frightened and uncertain, they were driven unprotestingly along the beach between the sea and the corral and by means of a strip of burlap were shunted in at the wide gate. Then started a frantic milling which deer handlers have found to be always counter-clockwise, or "against the sun." Soon the grass and the tundra flowers which had grown in the corral since last marking time were ground to atoms and a great tawny cloud of dust arose like a barrage concealing the deer from those who peered through the cracks in the corral wall.

Modern corral architecture has been devised as an aid to the rather recently adopted method of percentage marking of the deer. That is, the percentage of females bearing fawns is computed and each deer owner is granted an increase amounting to that percentage of his female deer. Until recently, the deer were caught by a lasso, and the fawns were given the same earmark as the female with which they seemed to be running. The corral was a simple circular
enclosure of drift logs or of brush if logs were not available. The reindeer, being a stupid and gullible creature, can easily be corralled because he will not try to jump through what he cannot see through.

The most efficient type of corral is composed of two large circular pens of equal size connected by two smaller pens and a narrow chute. The corrals vary in size somewhat but are generally built to accommodate the number of deer which can be "worked" in one day. The Unalakleet corral can accommodate about fifteen hundred deer. The two large pens are each 75 yards in diameter; one of the smaller pens is 50 feet and the other is 25 feet in diameter. The chute is a narrow passage 10 feet long and just wide enough to admit the wide-branched antlers. The end of the chute adjacent to the larger pen is provided with a heavy sliding door containing a wicket. With two dozen men helping, nine to twelve hundred deer were easily marked daily at Unalakleet. The total herd of thirteen thousand deer were dispatched in ten days of working from ten to fourteen hours a day. The continuous daylight made work possible at any hour of the twenty-four.

After about an hour of milling in the corral, the deer became quiet enough to allow the marking to begin. Opening the door between the large pen, containing the deer, and the smaller one adjacent, about one hundred of the animals were
separated and driven into the smaller pen by means of much shouting, flapping of arms, and stretching of burlap. This was called "seining," probably because the long strip of burlap was maneuvered somewhat like a seine. About ten of the one hundred were then promoted to the next smaller pen by a man assigned to the job. Another helper "shooed" the deer one at a time into the chute where its long antlers tick-tacked along the poles of the oblique walls until it plunged into the last large pen. On a small raised platform near the end of the chute stood two men. One of them swiped its side with a paint brush as it dashed by, and the other noted the ear-marks and shouted his observations to the three bookkeepers who sat at a crude plank desk near by. The paint was to prevent counting the same deer twice should it wander back to the unmarked portion of the herd.

If the deer were an unmarked fawn or yearling, it was seized by the antlers and by a swift twist thrown to the ground. If the deer happened to be a proud, strong, young bull, two or three men were often required to subdue his bucking and plunging. When the deer was once on the ground, a marker grabbed an ear and waited with poised knife for the instruction of the bookkeeper. The audience interestedly listened to the shouts of the caller and bookkeeper, and each deer owner remarked with complacent pride when his deer
was called. The released deer with bleeding ears scrambled to its feet and ran in its stiff, spraddle-legged fashion to the farthest side of the corral to wait for its fellows to go through the same process.

It was often the hour of very long shadows just before the great ball of the sun dipped below the horizon for its one hour of hiding when the last of the day's allotment of deer ran through the chute. Hardly anyone retired, however, until the last deer were released from their prison in the corral for everyone was fascinated by the picture of the deer with their antlers silhouetted against the gray background of the Bering Sea as they hastened away to freedom in the hills until the next roundup.

Reindeer, shortly after their introduction into Alaska, were used extensively for transportation, but they have of late years been almost entirely superseded by dog teams. Deer were generally driven to Lapland style sleighs called "pulkas" which are shaped like one-half of a canoe which has been cut in two crosswise. Unlike dogs, deer are driven with a line held by the driver who sits in the sled; dogs are controlled by the commands of the driver who stands on the runners at the back of the sled. For freighting purposes, deer and sleds are sometimes hitched in long caravans of alternate deer and sleds, all connected by ropes. Only one driver sitting in the first sled is
necessary to control all the deer. For going down a steep hill, the deer are often hitched behind the sleds. The speed of these varies, of course, with the size of the load hauled, but on the average they travel at about the same speed as a dogteam -- six to ten miles an hour. The deer are more efficient than dogs where there is no trail -- as in the case of prospectors striking off into the uncharted wilderness. Moreover, deer have the advantage of being able to find a meal of moss at most anywhere the traveller cares to make camp, whereas the dog must be fed on dry fish carried on the sled.

The great drawback to the use of deer for transportation is the fact that the deer fall easy prey to the malamute dogs in every village. Most persons who have had experience in driving deer have found that this one disadvantage outweighs all the other advantages. Many travellers have had their sled deer killed by savage dogs and have had to then continue with dogteams.

The Eskimo, being primarily hunters and fishers, did not at first realize the extraordinary advantages of being reindeer owners. A few famines have, however, opened their eyes. Deer were the one available source of food which prevented the annihilation by famine of the Point Barrow natives in 1897, of the Kotzebue natives in 1901, and of the
Quigillinguk natives in 1916. Reindeer are undoubtedly the Eskimo's most valuable possession since they are an ever ready source of both food and clothing. Deer at present sell for ten dollars per head or fifteen cents per pound in Alaska. The average deer weighs 150 lb. dressed. The Alaska Division of the Bureau of Education is doing all in its power to develop a market for reindeer meat in the United States. The motorship "Boxer," belonging to this Bureau, carries a cargo of reindeer meat back to Seattle every time it makes a trip to northern Alaska. However, the refrigeration and transportation facilities are still inadequate. When these difficulties are overcome (perhaps, partly by the establishment of canneries), there is no reason why the Eskimo should not make a fortune in reindeer.

Although fishing and hunting are still the most important occupations of the Eskimo, some minor occupations have been introduced through the efforts of the Bureau of Education teachers and the missionaries. By giving instruction in modern methods of caring for a garden and by furnishing free seeds, the Bureau of Education is encouraging the development of an industry of great value, which was entirely new to the Eskimo. Not every village has soil and climatic conditions suitable for these agricultural undertakings, but there are many places where gardens thrive remarkably well. The Yukon and Kuskoquim villages as well
as most of the coast settlements south of Nome have some gardens under cultivation. The most outstanding progress has been made at Unalakleet on Norton Sound under the supervision of the missionaries and the government teachers and at Holy Cross under the supervision of the French Catholic missionaries.

At Unalakleet, every family has a garden -- usually neatly fenced. Each year the plot of ground under cultivation is enlarged a little; the work of breaking new ground covered with tough sod, as it is, would be most discouraging if the native had not learned by observing the missionaries and teachers that the yield would be worth the effort. There is one labor-saving device used extensively in preparing new ground. Turnips or potatoes planted between blocks of sod break up the sod with their roots and at the same time yield a fair-sized crop.

Potatoes are the chief garden product because they yield more food value per square foot of ground than anything else raised. A plot fifty feet square in a normal season will yield twenty-five bushels. The large potato crops were the motivation for excavating cellars beneath many Eskimo houses. Any surplus potatoes are sold to the trader at ten dollars per crate of one hundred pounds. The village of Unalakleet gains a considerable profit by also furnishing
the potatoes for the Bureau of Education Industrial School at White Mountain.

Preparations for the garden are started in April. Seedlings are raised in window boxes and small hothouses heated by coal oil lamps or stoves. The snow is shovelled off the garden plot about the first of May to enable the ground to thaw more quickly, and by the middle of June the plant slips are transplanted to the outdoors and seeds of the quicker maturing plants are sowed directly into the garden. By the end of June, there is an abundance of lettuce, radishes, and onions spurred to quick maturity by the almost perpetual sunlight. Peas, beets, cauliflower, spinach, carrots, turnips, and rutabagas are edible by the last of July; cabbage and potatoes are not harvested until frost threatens in September.

At Holy Cross the Catholic school and orphanage have become self-supporting through their agricultural and dairy enterprises. The Moravian missionaries at Quinhagak have brought soil to their coast village from several miles up the river for gardening purposes and in the last two years they and the Eskimo of their village have been experimenting with gardens in the rich soil of shallow lake beds which were drained for the purpose. Many villages which are located upon sites which are not suitable for gardening can profit by having gardens at a distance of
several miles from the village.

The primitive Eskimo were not natural farmers and many are not now especially interested in this new occupation. Neither were they reindeer herders, but many of them now own and care for large herds. The task of converting a race of hunters and fishermen into a race of herders and farmers is not to be completely accomplished in one generation, but the results already obtained by the missionaries give ample proof that the work has not been futile.

A considerable number of Eskimo have adopted one or more of several miscellaneous occupations which have developed through opportunities offered by the white man. Ivory carving affords old men, who can no more participate in the strenuous occupations, a means of livelihood. Younger men, when extremely inclement weather forces them to stay indoors, also resort to ivory carving as a lucrative pastime. The constantly increasing number of souvenir-seeking tourists to Alaska afford a ready market for these ivory products. These carvers do not originate many new patterns but they become exceedingly skilled in reproducing from a model. Many of them are able to fulfill a given order for carved ivory by suggestions given by a drawing. Thus the instruction given in drawing classes in the Bureau of Education schools is put to practical use by the Eskimo.
in both planning and decorating his ivory products.

Many of the men are quite adept at using the white man's tools in woodworking. Some of them prefer this type of occupation to all others and have completely forsaken hunting and fishing to be carpenters. There is usually at least one man in each village who does this type of work. He makes boats, sleds, snowshoes, and often builds houses for both Eskimo and white people. Some of the more skillful carpenters become quite wealthy for Eskimo. Many of this class invest their surplus earnings in reindeer in order to be independent in their old age.

Although ivory carving and basket weaving is done to a large extent by the older generation of Eskimo, the children who are now in the Bureau of Education schools are learning the use of methods and implements which will enable them to do better carving and weaving in a more efficient manner. Many of those schools also give training in mechanics which familiarize the boys with the working principles of gasoline engines of a type commonly used on small schooners, while practically all schools train boys in the use of carpenter's tools. Some boys in the schools are able to make sleds and boats with modern methods and tools which arouse the admiration of their fathers who can do no better after a lifetime of practice with their old methods and implements.

It sometimes happens in isolated localities that a few
weeks or even two or three months may elapse between the
departure of teachers and the arrival of their successors.
The enthusiastic greeting with which the Eskimo meet the new
teachers after having none for a time is ample proof that
the work of the Bureau of Education is recognized by them as
having a beneficial influence.

SUMMARY OF CHAPTER VI

OCCUPATIONS AND IMPLEMENTS

1. The adoption of cotton and linen twine for nets and
   lines, wire for hooks, and wire netting for traps, the fish
   wheel for catching fish, and steel knives for cutting them,
   has enormously increased the ability of the Eskimo to make
   his living from fishing.

2. The adoption of improved methods and implements for
   hunting has meant not only an increase in food supply, but
   it has enabled the Eskimo to purchase with fur the many
   articles commonly considered by the white man to be
   necessities which he would otherwise be unable to obtain.

3. The enforcement of game laws in Alaska serves a
double purpose; it protects fur-bearing animals from
extinction and teaches the Eskimo the meaning and purpose
of obeying laws.

4. The reindeer industry introduced by the Bureau of
Education has given the Eskimo a substitute for the vanishing caribou and a means of making himself economically independent.

5. The developing of gardening among the Eskimo of certain localities has furnished a valuable means of variation in an otherwise monotonous diet.

6. Some occupations which have developed in response to opportunity created by the adoption of a somewhat civilized mode of life are ivory carving, basket weaving, carpentry, transportation, and trading. The Eskimo child, in a manner which makes him more competent to engage in these and similar occupations, has been trained in the Bureau of Education schools.
CHAPTER VII

PRIMITIVE AND MODERN HEALTH CONDITIONS

The process of changing a race of nomadic barbarians to orderly self-supporting citizens in two or three generations is one involving both advantages and disadvantages of many kinds. The conditions relative to food, clothing, and habitations under which the primitive Eskimo lived were of such a rigorous nature that only the fittest were able to survive. Those individuals who were most fit under primitive conditions were, however, not necessarily most fit for a highly civilized mode of life.

Centuries of existence upon a diet consisting almost entirely of meat and fish has produced a race which is well adapted to the use of that type of food. With the inevitable advance of civilization, this diet has been changed fundamentally. The caribou which were formerly relied upon as a valuable source of food are gone from his hunting ground and the Eskimo is not always able to procure reindeer as a substitute. Many of them have had no opportunity to
serve as reindeer apprentices or have not been wise enough to take the opportunity when offered and are now too poor to purchase reindeer. This condition has forced a change in diet.

The trappers who are able to purchase food with fur, purchase the kind of food which is offered in the store. Through the efforts of teachers and nurses, some of the Eskimo have learned the relative value of different forms of the white man's foods, but the majority of them still remain in ignorance of food values and choose on the basis of taste entirely. With pleasing taste as a criterion, most Eskimo select white flour, granulated sugar, tea, and coffee as a main course with candy and chewing gum for dessert. During periods when fish and meat are scarce, these articles form the major portion of the diet. The flour is generally made into inch-thick pancakes which defy digestion and sugar is used in large quantities.

A study of the teeth of Eskimo who died before the use of these denatured foods were used extensively revealed many perfect sets and none with caries. A study of the teeth of seventy-five Eskimo children in one school and forty-eight in another showed that more than fifty per cent had defective teeth due to decay. In response to a letter of inquiry regarding the effect of some of the white man's foods upon the Eskimo, the following statement was received
from Dr. Hrdlicka of the Smithsonian Institute: "... they (white people) have introduced white man's food such as sugar, canned goods, syrup, baking powder, flour, etc., as a result of the use of which the Eskimo are now suffering considerably from tooth decay, which was practically unknown before the introduction of these foods."

The efforts of teachers and nurses in encouraging the Eskimo to substitute whole wheat flour and whole corn meal for white flour and to purchase some milk, oranges, and dry fruit instead of such large quantities of sugar, candy, coffee, and tea are helping to correct some of the most common dietetic errors. That malnutrition is often responsible for the low resistance of the Eskimo to tuberculosis has been shown by the marked improvement and frequent cure of patients afflicted with this disease who have received proper care and food in government hospitals. The testimony of Eskimo not in hospitals who have noted marked improvement in faulty digestion and in general physical condition after making the dietetic changes suggested by nurses and teachers is ample proof that the present dietetic habits of the Eskimo are often faulty and that their correction will improve health conditions.

A degree of cleanliness which was impossible when practically all the clothing was of fur has now come about
through the adoption of cotton and woolen apparel. One of the most important duties of the Bureau of Education teachers and nurses is the teaching of personal cleanliness. The striking contrast between the neat appearance of the children in the schools and the slovenly, unkempt appearance of the people living in isolated districts where there are no schools is invariably one of the most vivid impressions received by persons investigating living conditions among the Eskimo. The value which inheres in a change from filth to cleanliness needs no support here. This change was made possible by the substitution of washable garment material for fur which could not be laundered without damage to the garment.

The change from the primitive igloo to the modern log cabin has created a fuel problem which, in some localities, has made the Eskimo so conservative of heat as to seriously restrict ventilation. This can hardly be said to be a change for the worse, however, for the primitive igloo was often as poorly ventilated as the modern cabin. If the igloo was heated with body heat only, there was hardly any ventilation; if a lamp or fire was used for heat and cooking, the hole in the roof was opened to allow the smoke to escape. It was quite often the case that enough of the smoke remained in the igloo to seriously obstruct both vision and breathing.
Stoves are now in almost universal use among the Eskimo for heating their cabins and for cooking; incidentally, they are a means of ventilation. The custom of tightly closing the cabin's every opening at night after the fire goes out is a pernicious one which is common among Eskimo and white people alike during periods of exceedingly low temperature, and is not a fault of the change from the igloo to the cabin. As long as white people in positions of responsibility furnish such a poor example this habit can hardly be expected to be changed among the Eskimo. Some of the houses are ventilated at night during the coldest weather without any resulting ill effect. Bedding warm enough for the coldest weather and cheap enough for the poorest Eskimo may be made from reindeer skins with a washable cloth covering. Consequently the only excuse left for poor ventilation of sleeping quarters are ignorance and prejudice.

Another improvement of the cabin over the igloo is that of the lighting facilities which have an important influence upon health. Sunlight, an invaluable aid to the cure of tuberculosis which is prevalent among the Eskimo, was rarely able to penetrate the gloom of the igloo during the long winter months. If the sun did shine -- there were many days when no sun could be seen -- its feeble rays created only a crepuscular light within the igloo after piercing the one
seal-gut window in the roof. All the log cabins of Eskimo today have at least one and often several capacious glass windows facing the south to take advantage of all possible sunlight during the short winter days.

The natives are often helped in planning their houses by the teachers and missionaries. At Quinhagak near the mouth of the Kuskokwim River, the Moravian Mission helps the natives in their building by furnishing lumber at cost from the mission saw mill at Bethel or by purchasing lumber, nails, windows, and sheet-iron roofing from Seattle and selling it to them at cost. Owing to the scarcity of wood for fuel at this station, a project is now under consideration whereby the Mission may purchase coal from Seattle to be sold to the Eskimo at cost. The successful operation of this plan would undoubtedly be a valuable step in the solution of this very important problem of the Eskimo of that locality.

The exact extent to which primitive Eskimo were subject to disease is difficult to determine. It is certain, however, that he has received several unwelcome gifts from the white man in the form of disease. In the same letter which has been quoted concerning foods, Dr. Hrdlicka says, "... the white people have introduced alcohol, also syphilis, smallpox, and other contagious diseases to the Eskimo."
TABLE I

BIRTH AND DEATH RATE AMONG ESKIMO, INDIAN, AND MIXED BLOODS. (1924 to 1927)

NOTE:
Table I is not in this copy but was in the original as submitted to the University.

A page of text regarding the health of the Eskimo is also missing immediately following Table I.
TABLE II: TOTAL BIRTHS AND DEATHS IN ALASKA

<table>
<thead>
<tr>
<th>Year</th>
<th>Births</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1917</td>
<td>1191</td>
<td>1176</td>
</tr>
<tr>
<td>1918</td>
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<td>1919</td>
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<td>2171</td>
</tr>
<tr>
<td>1921</td>
<td>2185</td>
<td>2171</td>
</tr>
</tbody>
</table>

4. This table, which was copied from the Annual Report of the Governor of Alaska for 1928, shows that the birth rate for both whites and natives of Alaska normally exceeds the death rate. The influenza epidemic was responsible for the enormous increase in the death rate for 1918.
TABLE III: ANNUAL BIRTH AND DEATH STATISTICS
FOR UNALAKLEET FROM 1894 TO 1927

<table>
<thead>
<tr>
<th>Year</th>
<th>Births</th>
<th>Year</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1894</td>
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</tr>
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<td>1896</td>
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<td>1896</td>
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<td>1897</td>
<td>9</td>
<td>1897</td>
<td>9</td>
</tr>
<tr>
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<td>2</td>
<td>1898</td>
<td>19</td>
</tr>
<tr>
<td>1899</td>
<td>6</td>
<td>1899</td>
<td>7</td>
</tr>
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<td>1900</td>
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</tr>
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<td>7</td>
<td>1906</td>
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</tr>
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<td>1911</td>
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</tr>
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<td>13</td>
<td>1912</td>
<td>8</td>
</tr>
<tr>
<td>1913</td>
<td>12</td>
<td>1913</td>
<td>7</td>
</tr>
<tr>
<td>1914</td>
<td>11</td>
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<td>13</td>
<td>1917</td>
<td>12</td>
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<td>1920</td>
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</tr>
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<td>1922</td>
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<td>12</td>
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<td>4</td>
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<td>1925</td>
<td>12</td>
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<td>1926</td>
<td>8</td>
<td>1926</td>
<td>5</td>
</tr>
<tr>
<td>1927</td>
<td>12</td>
<td>1927</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 274 Total 217

Net increase 57 in 33 years; average annual rate of increase 1.56. Average birth rate 8.13; average death rate 6.57.

The author compiled this table from records of Rev. E. B. Larsson of the Swedish Mission at Unalakleet in Alaska.
The number of births for the years 1888 to 1893 inclusive at Unalakleet were 4, 4, 2, 10, 6, and 11. As no record was kept of the deaths during this period, these births are not included in the table. Because of the strict quarantine which was enforced in this village by the nurse and the teachers, there was no increase in deaths during the influenza epidemic of 1918 which, according to the statement of the Rev. August Anderson (who was a missionary on Norton Sound at that time), took a death toll of one-hundred-fifty from a total population of two hundred in the village at Cape Prince of Wales. He also stated that there is a grave near Nome in which the total population of a village of about two hundred Eskimo are buried; they were victims of influenza. Table Number II showing births and deaths of both native and white population from 1917 to 1927 shows the effect of this epidemic which decimated many Eskimo villages and completely annihilated others.

During the year 1907, there was an epidemic in Unalakleet which took the heaviest death toll of which there is an official record. The same disease, which was described by a Golovin missionary as an epidemic in his village in 1900, was termed "lung fever." According to Rev. Adolph Stecker, a Moravian missionary, this same epidemic took over half of the population of the Kuskokwim River district. According to the oldest inhabitants now living in
Unalakleet, Kligichtowak, and Pastolik, there was an epidemic about the year 1875 during which the three hundred inhabitants of Unalakleet all died with the exception of about a dozen individuals who had the disease and recovered and four or five families which were at temporary camps in the mountains or along the beach. The natives of Pastolik and Kligichtowak were almost annihilated. From the description of the deep scars left upon the faces of the few survivors, the disease was evidently smallpox. The Eskimo think that this disease came as a result of purchasing a number of blankets from the Russians who wished them harm.

There is also an account given by very old Eskimo of Unalakleet of a terrible epidemic which occurred during the Russian occupation of that village (1833-1867). The Russian doctor told the Eskimo that if they would allow him to make a cut on their arm and pour in some fluid from a bottle, they would not die. Many believed him and submitted to the experiment, but they all died in spite of this treatment, which was apparently an attempt at vaccination. The natives thought the doctor was their enemy and had tried to poison them.

Table IV gives the birth and death statistics for the years 1920 to 1928 inclusive of all the villages on the one
TABLE IV: ANNUAL BIRTH AND DEATH STATISTICS FOR QUINHAGAK DISTRICT FROM 1920 TO 1928

<table>
<thead>
<tr>
<th>Year</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Total</th>
<th>Increase/Decrease</th>
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<td>1920</td>
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</tr>
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<td>1</td>
<td>5</td>
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</tr>
<tr>
<td>1926</td>
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<td>3</td>
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<tr>
<td>1928</td>
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<td>4</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>32</td>
<td>32</td>
<td>28</td>
<td>72</td>
<td>36</td>
</tr>
</tbody>
</table>

Net increase 110

"A" represents Eek  "B" represents deaths
"C" represents Apokak  "D" represents births
"D" represents Quinhagak  "D" represents Good News Bay

( Total population of all villages at present 664.)

This table was compiled by the author from records kept by Rev. F. Dredert of the Moravian Mission who is the missionary in charge of the Quinhagak district.
hundred miles of coastline near the mouth of the Kuskokwim River from Eek to Good News Bay. There is a Bureau of Education school at each of these villages except Apokak. The missionary stationed at Quinhagak also pays frequent visits to these villages to conduct religious services and to cooperate with the teachers in projects concerning the welfare of the natives.

In order to provide medical and sanitary relief for the Eskimo, the Bureau of Education employed in its work during 1928 five doctors, one dentist, and fifteen nurses. The medical employees were distributed among ten hospitals and on a medical boat which visits villages along the Yukon River for the purpose of giving medical attention.

SUMMARY OF CHAPTER VII

HEALTH

1. The substitution of some of the white man's devitalized foods for a large portion of the Eskimo's primitive diet has proved detrimental to his health. Owing to the efforts of some of the Bureau of Education teachers, the Eskimo is gradually becoming educated to know the relative value of different items of the white man's food.

2. The change from fur to cotton and woolen material for certain articles of clothing has made it possible for
him to have a cleaner body as well as cleaner clothing and cleanliness is conducive to health.

3. By encouraging the Eskimo to build log cabins instead of igloos and by introducing the use of glass windows, the teachers and missionaries have contributed to the improvement of health conditions among the Eskimo.

4. The white man has given the Eskimo many diseases which shorten his life span and contribute to his misery while he is alive. To counteract this influence, the Bureau of Education has brought the forces of education and medical relief to his assistance in order to help him overcome not only diseases but also to eradicate many other unfavorable environmental conditions to which he, in his ignorance, was helplessly subjected.
CHAPTER VIII

FROM THE ESKIMO LANGUAGE TO THE ENGLISH LANGUAGE

Mention was made in the chapter on racial traits to the effect that the Eskimo language is divided into many dialects. Investigation has shown that although the principles governing grammatical construction are quite similar among different tribes, many words of the vocabulary are often quite different. On account of the many tribal feuds and the poor transportation facilities, the intercourse between different tribes was limited to a great deal of fighting and very little similarity in language was necessary, the uniformity within the tribe was all that mattered.

With the adoption of a civilized mode of living, the Eskimo is faced with many situations in which he finds his language inadequate. As a means of oral communications among individuals who thoroughly understand it, the Eskimo language is no doubt efficient. Teachers, missionaries, and traders who know both Eskimo and English have made statements to the effect that the method of modifying a noun or
a verb by the use of prefixes, suffixes, and often "infixes" as used in Eskimo is frequently more efficient in the expression of an idea than the English; but the use of the Eskimo language in teaching in the Alaskan schools would involve problems, the seriousness of which would far out-weigh the value of the Eskimo language as a means of oral expression. The main problem is found in the wide variation of dialects among the different tribes. This would make a system of uniform textbooks impossible. The cost of having different books for different tribes would make the system too expensive to be practical.

It would also be very difficult to get efficient teachers who could teach in the dialect without years of special language training. One of the most important arguments against teaching in Eskimo is that there is no literature to study in that language, and if teaching were in Eskimo, both the English literature of the past and the current magazine publications would be incomprehensible to the Eskimo.

The only attempt to publish anything in the Eskimo language in Alaska has been made by the Moravian missionaries among the Kuskokwamut. This mission has representatives stationed at Bethel and Quinhagak and an orphanage supporting forty Eskimo children about eighteen miles north of Bethel. In order to facilitate the singing of hymns in
religious services held in these and neighboring villages, over one hundred English hymns have been translated into the Kuskoquagamiut dialect. Most of these hymns have been bound into booklet form to be used by the natives. Several books of the New Testament have also been translated into Eskimo for the use of the native Sunday School teachers. Copies of the hymn books and testaments were presented to one of the Maleniat interpreters who could read, write and speak English quite well, and who could read his own dialect written with English letters. Many of the Kuskoquagamiut words were unintelligible to him, and many more would have been meaningless had he not been able to guess at their meaning from being familiar with some of the songs and bible verses.

This translation has been of considerable use to the missionaries in their religious work. In reality, however, the ability to read the Eskimo dialect written with English letters and pronounced according to English rules of pronunciation, is dependent upon the instruction in phonetics received in the Bureau of Education schools. Those who are able to read the Eskimo best are generally those who have had the most training in school and vice versa. Many of the Eskimos who have had several years in school are able to read and write letters in their Eskimo dialect by using English phonetics.
The instruction of the Board of Education schools is conducted entirely in English. Most of the children know little, if any, English when they enter school; since the teachers do not teach in Eskimo, the children learn English by the direct method. A great deal of English is soon acquired by the beginners by hearing the other children recite and by observing the relationship between the teacher's questions and the older child's responses. Names of common articles are learned through games. For example, some teachers make excellent use of catalog and magazine pictures in teaching English. The first child to say the name of the object represented by the picture is allowed to hold the picture temporarily. Considerable competition arises in trying to "see who can get the most." The winner usually gets a little reward such as three or four raisins.

About the second or third week after entering school, the child begins to study the Beacon Phonetic chart containing the most simple English words pronounced phonetically. Within the same week they are able to start in the Beacon Primer which contains mostly pictures and a few easy descriptive sentences. Owing to the lack of previous knowledge of English, the progress of Eskimo children is much slower than that made by half-breed children who learn English from their fathers.

The subjects of reading, spelling, writing, arithmetic,
hygiene, geography, history, nature study, and music are studied from text books as soon as the child learns enough English to understand them. Since this period is considerably delayed in comparison to the time when such studies are introduced to the child in the English-speaking community, the teacher often starts teaching the subject without text by means of simple lectures and many concrete examples.

The primary purpose of the school during the first four years is to develop ability to speak, read, and write English. Music study often serves a double purpose through aiding in the development of vocabulary.

Hygiene and sanitation are emphasized from the day of entrance so that the child is often well acquainted with the vocabulary of this subject before he begins the study of a hygiene text book.

Although a thorough knowledge of English is not necessary, it is quite valuable in teaching Manual Training and Domestic Science because it enables the pupil to understand directions and to take advantage of advice. Almost every Bureau of Education school has a small library. Some of the books deal with methods and principles of instruction and are rarely perused by anyone except teachers. The majority of the books are easy fiction with animal stories predominating. Some libraries have the Boy Scout and
Campfire Girl series. These books are eagerly read by boys and girls above twelve years of age and many of them are read by adults who received training in the school either while they were children or in the night school which is sometimes conducted by the Board of Education teacher. A few adults in the more advanced villages now subscribe for the cheaper magazines such as the "Ladies Home Journal" and "Pictorial Review." Others frequently borrow magazines subscribed for by the teachers, missionaries, traders, and mail carriers. The "Popular Mechanics," "Popular Science Monthly," and "Scientific American" magazines were often scrutinized far more carefully by the Eskimo boys and men than by the teacher or missionary who subscribed for them. These magazines possess utilitarian as well as recreational value since many suggestions concerning mechanical devices are put into practice in boat, sled, and house-building, and in the operation of gasoline engines for boats.

The value of being able to speak any language can hardly be realized by one who has never had the experience of being in a group of people who are conversing freely in a language which he does not understand. Language appears even more important if the person so situated attempts to express himself to the individuals of the group without being able to convey any of the ideas which he tries to express. This condition which has occurred so frequently
with many Eskimo and white people in Alaska is gradually being eradicated by the teaching of the English language in the Bureau of Education schools in Alaska.

Because of the high esteem in which the Eskimo holds his own language, most parents speak only Eskimo to their children even though the parents are able to converse in English. The parents who have been educated in the Bureau of Education schools realize the value of training in English and almost invariably are interested in having their children make rapid progress in school work. These parents sometimes assist the child in solving various problems which arise in connection with his school work. The most common example of this type of assistance is helping the child memorize his part in a holiday program. All parents are proud of their children if they do well upon such occasions.

The development of the desire among parents to have their children educated in the white man's ways has furnished a powerful motive for having the children learn the English language in the Bureau of Education schools. With the knowledge of how to speak, read and write the English language comes many other kinds of knowledge which are useful to the Eskimo in acquiring the best things which the white man's culture has to offer.
SUMMARY OF CHAPTER VIII

LANGUAGE

1. Under primitive conditions, the many dialects of the Eskimo language furnished an adequate means of oral expression.

2. Many situations arise under the present civilized mode of life in which reading and writing are necessary attainments.

3. Owing to the presence of many serious obstacles in teaching in the Eskimo language in the schools of Alaska, it is necessary for Eskimo children to learn English in these schools.

4. Through the realization of the value of the many advantages to be attained by being able to speak, read, and write English, many Eskimo parents co-operate with the teachers in an effort to educate their children.
CHAPTER IX

FROM SHAMANISM TO CHRISTIANITY

Though the missionaries in Alaska have cooperated with the teachers in many of the school and village improvement projects, the main objective of the missionary has always been to convert the Eskimo to Christianity and to persuade him to abandon the practice of the rites and customs of his old religion.

The religion of the primitive Eskimo was based upon the assumption that all phenomena are controlled by spirits which are, in turn, controlled by the shamans. Owing to the conception that the spirits could be governed and directed by the various charms and formulæ known to the shamans, there was no need of anything like prayer or supplication in their religion. Since every village had at least one and sometimes several shamans, there was often considerable variation of opinion upon religious matters. There was little uniformity or clearness in regard to ideas about a future life. There was no conception of a heaven
or hell in a future life.

The spirit of a deceased person was thought to remain in the house for a few days after death and then to retire to the grave where it waited for the birth of the next child in the village. If several deaths occurred before the birth of a child, the parents could choose any one or several of the group of homeless to be the guardian spirit of the child. If several children were born between the occurrence of one death and the next, each of the children received the same spirit for his guardian. The Eskimo did not bother to explain how the soul of one man could inhabit the bodies of a dozen different children or how a dozen different spirits could abide peaceably in the body of one child.

This idea of reincarnation which often remains dimly present in the minds of the modern Eskimo is responsible to a large extent for the reluctance with which Eskimo parents punish their children. It was thought by the primitive Eskimo that the child needed the protection of a guardian spirit to help him to avoid disaster, which might easily befall a child, until his own personal spirit was capable of taking care of itself. If the parent should punish the child, the guardian spirit would probably be offended and desert it. It was not certain what would become of the guardian spirit if such desertion should take place, but
the child would undoubtedly fall an easy prey to disease and death. When the child became ten or twelve years of age, it was commonly supposed that the child's own personal spirit had gained sufficient experience to do without a guardian spirit. The parents then considered it safe to begin to punish the child, but generally the habit of obeying the child's whims was so strongly established that it was seldom broken.

Owing to the performance of many so-called miracles under their very eyes, there were few, if any, skeptics, among the primitive Eskimo. They not only believed in but expected miracles. Any fortune or misfortune which could befall an Eskimo could be explained on the basis of spirit participation in human affairs. Although some events were commonly thought to happen at the instigation of uncontrolled spirits, the major portion of the miracles were believed to occur under the direction of the shamans.

While every shaman had at least one familiar spirit under control to assist in the performance of miracles, the most powerful ones often had a small army of spirits which were bound by charms, formulae, and amulets to do his bidding. When a powerful shaman became so old that he was unable to hunt and fish, he could sell some spirits to younger men who wished to become proficient in the art of
wizardry. The amount of food or implements given in payment for a spirit depended upon the scarcity of food and the fame of the shaman.

The performance of the various miracles differ to some extent in different localities, but there were some miracles which were commonly practiced by all the great shamans. Such feats as raising the dead, walking on the water, and remaining under the water for several hours were accomplished only with great difficulty and had been witnessed by very few spectators. But there was one miracle which was universally vouched for -- the spirit flight. Sometimes the shaman made a miraculous visit to some distant place, such as to another village, to the bottom of the sea, or to the moon. In stormy weather, the shaman often made a trip to the moon. If his spirits were strong enough to gain entrance to the house of the powerful shaman who lived on the moon, the visitor was able to discover what taboos had been broken to offend the spirits and cause the stormy weather. It was sometimes found that some shaman in another village had caused all of the trouble in order to avenge some offense by a member of the afflicted village.

The trip to the moon could be made in two ways. One way allowed the shaman to go in his physical body; the other way released the spirit by means of a trance. The
latter method could be in the daylight before spectators while the former required absolute darkness and the blindfolding of everyone present. Information received upon such trips was supposed to be entirely reliable; however, at other times the shaman was subject to error.

Since a "wise man" was "one who knew a large number of taboos," the shaman was careful to collect and invent as much of this knowledge as possible. It was generally conceded, however, that no shaman could know all of the charms and taboos and if his efforts to exorcise an evil spirit failed, the failure could be attributed to the operation of some charm over which he had no power.

Due to the fact that the shaman was the principal figure of the primitive Eskimo religion and also because his position was a lucrative one, this dignitary was the chief obstacle to the adoption of Christianity by the Eskimo. If the shaman adopted the new religion, many of his followers would follow his example.

During three years of observation of conditions among the Eskimo at Uralakleet, where the Swedish Mission was

1. Stefansson, V., My Life With the Eskimo, p. 412. established in 1886, and one year at Quinhagak, where the
Moravian Mission was established in 1903, considerable information was accumulated concerning the religious life of the natives residing in these two villages. To what extent the old religious ideas are retained is often difficult to determine because of the reticence with which the Eskimo meets the attitude of ridicule and skepticism commonly held by white people in regard to the old form of religion.

In the villages of Unalakleet and Quinhagak, practically the entire native population attends every service held in the church. The missionaries have taught the Christian religion in these services in much the same manner in which such services are conducted in the churches of the same denominations for white people. The stories of the Bible are taught in regular sermons and in Sunday-school lessons with the emphasis upon the application of Christian moral principles to everyday life. As a result of the adoption of this teaching, the "do's" and "don'ts" of Christianity have been substituted for the taboos of the primitive religion and the missionary has taken the place of the shaman as a religious advisor for the community.

The missionaries and teachers often collaborate in giving programs in the church or school upon such occasions as Christmas, Thanksgiving, New Year's, and Mother's Day. The singing of hymns which is an important part of every
chuch service furnishes a great deal of enjoyment to most Eskimo who attend church services. The churches at Unalakleet, Quinhagak, and Bethel have choirs which are able to render anthems and cantatas in a creditable manner. Although some of the choir members try to memorize their parts, the majority of them are able to read music with considerable speed and accuracy. The early training in music which is received in the Bureau of Education schools generally gives the foundation in music reading which is further developed by the church choir rehearsals held once every week during the winter except for the two or three weeks immediately preceding special programs when there is choir practice every evening. Travellers and tourists hearing some of the programs given by these choirs always marvel at the ability of the natives to produce good music.

At Unalakleet all children over twelve years of age enter the class conducted by the missionary in preparation for confirmation. The members of the class are taught the creed of the church and an attempt is made to instill in them a reverence for the teachings of the Bible.

According to the testimony of traders who have observed the effect of several different missionaries upon the natives of the same village, the most beneficial changes have been brought about not from formal teaching but as a
result of clean living and high moral standards as practiced in the lives of the missionaries themselves. It has also been observed that the Eskimo has little respect for the admonitions and advice of a missionary who does not conduct his own affairs in everyday life according to the principles which he asks them to follow.

SUMMARY OF CHAPTER IX

RELIGION

1. The religion of the primitive Eskimo was based upon the presumption that all phenomena are controlled by spirits which are the servants of shamans.

2. The theory of reincarnation was partially accepted in the idea that every child had a guardian spirit which resided in the body of the child simultaneously with the spirit of the child.

3. The shaman was the mediator between the Eskimo and the spirits and was supposed to be able to control the spirits either for good or evil.

4. The missionaries have supplanted the shaman and with this change came the teaching of the taboos of Christianity to take the place of the old taboos.

5. Although many of the changes in the religious beliefs of the Eskimo have been accomplished through the
preaching and the teaching done by the missionaries, the most important factor in the persuasion of the Eskimo to practice the principles of Christianity has been in the lives of the missionaries themselves.
CHAPTER X

PRIMITIVE AND MODERN SOCIAL RELATIONS

The social relations of the primitive Eskimo as well as the religious ceremonies were in the main restricted to activities within the tribe. One of the fundamental reasons for this restriction was the lack of adequate means of travel, transportation, and communication with which to span the many miles of rugged uninhabited territory which often separated the different tribes. This isolation of tribes erected further barriers by permitting the development of differences in language and a feeling of antagonism toward all "strangers."

Since there was no central government to give protection or to bring criminals to justice, very few primitive Eskimo were willing to try to carry on trade with strange tribes for fear that they would be killed and their trading stock confiscated. Small parties of hunters were sometimes attacked and killed for daring to hunt within the territory claimed by another tribe. If all the
members of the hunting party were not killed, the survivors would inform their own tribe of the massacre and a tribal feud would be born which might result in the total extinction of one of the warring factions. Such feuds very frequently existed between the Eskimo who inhabited the coast and the Indians who were located along the rivers and lakes of the interior.

Many stories are told by old men and women of Unalakleet about the war raids which were carried on between themselves and the Indians of the Yukon River. A few miles below what is now Kaltag, the Indians would enter a tributary of the Yukon. By means of their light canoes, they could ascend this river to a point near its source. There they would take the canoes upon their backs and carry them across a portage to the headwaters of the Unalakleet River where they would re-embark to descend this river for an attack upon the Eskimo living at the mouth. The Indians usually selected an isolated fishing camp consisting of three or four families as their objective. Their surprise attack usually took place at night. All of the Eskimo males and old women were killed, while the young women were frequently taken as part of the spoils along with the best of the fur, weapons, and implements. Several camps were sometimes plundered in succession in this manner during a single predatory raid. There were times, however, when an
Eskimo sentinel would discover the approach of an Indian raiding party in time to warn the people of several camps who would surround the raiding party and slaughter them. It is claimed by the Eskimo that the Indians were usually the aggressors in the matter of raids, but that occasionally Eskimo took the offensive in order to avenge wrongs.

There are also many examples of long continued wars between two tribes of Eskimo. The Kinugamiut of Cape Prince of Wales were constantly in fear of raids from the Chukchees of the Siberian coast. However, the Prince of Wales natives were often the aggressors in making attacks across the Bering Strait. Mr. Clark M. Garber, a former government teacher at Cape Prince of Wales, stated that the Eskimo at that place erected piles of stones upon the cliffs above their village in such a manner as to resemble human beings. This was to give the attacking Chukchees the impression that they were detected and that the village had more defendants than it really had.

Bitter tribal feuds often arose from family quarrels. For example, a family from a village on the west side of the Kuskokwim River was visiting a family in a village upon the east side of the river. Each of the families had a small boy. While these boys were playing together, the son of the host accidentally threw a dart into the eye of the
other child. When the father of the injured child discovered that his boy's sight was destroyed in one eye, he demanded permission to destroy an eye of the child who threw the dart. The host, wishing to be fair, commanded his son to submit to this method of settlement. The enraged visitor was not satisfied, however, with taking "an eye for an eye" but destroyed both eyes of his host's child. The host then considered himself justified in taking the life of the guest for his violent act. The dead man's wife then returned to her own village with her son and a story of outrage and murder against her son and husband. Upon hearing the story of the woman, the people of the west side village immediately gathered a large war party which attacked and massacred a large portion of the east side village. By arousing the sympathy of other east side villages, the remnant of the attacked village formed a war party which reversed the process of massacre. In this manner, the feud grew until all the Eskimo villages along the east side of the Kuskoquim were at war with the villages on the west side as far as Nelson Island.

Beginning with the purchase of Alaska by the United States in 1867 and the consequent establishment of schools and missions to help the Eskimo solve his problems, the feuds among most tribes were abolished. In only a few instances has it been necessary for the United States
marshals to imprison Eskimo who insist upon maintaining the feuds.

A subdivision of the tribe is the village. Owing to the various unifying influences within the tribe, there was much more travel, trade, and communication between villages of the same tribe than between villages of different tribes.

Every permanent village had a community-house called a "kashim" around which social life centered. The kashim was built in the same manner as the underground igloo residence but on a larger scale. The actual size of the community-house depended upon not only the size of the village, but also upon the hospitality of its members. It was often the custom for several villages to assist in a "kashim-raising" as a means of expressing the friendship which existed between the villages. Every winter one or more villages of a certain locality would invite its neighboring villages to a dance and feast called a "potlatch." This celebration often lasted a week. Each visitor was requested to bring a present for which he would receive a present in return. During such festivals, it was often necessary for the shaman to divide the position of honor with a "head man" who was usually selected because of his unusual prowess in athletic feats,
hunting, and warfare. The lion's share of the presents generally fell to the shaman, the "head man," and to various persons who were notable for their exploits. These potlatches afforded a great deal of recreation and served as a means of maintaining friendly relations in a group of villages, but they also worked a hardship on the village which gave the feast by consuming most of the food supply. Many famines have been the direct result of the potlatch feasting. The custom of having festivals is still common among many tribes, but owing to missionaries' objections to any form of dancing many of the villages have discontinued the practice.

Besides being used for the potlatch, the kashim furnished the stage upon which many of the shaman's miracles were enacted in the presence of the whole village. In order to accommodate the crowd, shelves were often constructed above the ordinary seat which was built around the wall. The children usually occupied these improvised shelves.

The shaman and his rites have now disappeared from most villages but the kashim is still used as a workshop and general meeting place for the men as was the custom in primitive times.

The passing of the potlatch has not resulted in the discontinuance of inter-village convocations. Even more
villages now take part in the annual reindeer fairs and church conferences which are held under supervision of the teachers and missionaries. The fairs not only furnish wholesome recreation in the form of competitive sports, but they also serve as a stimulus for the development of the many phases of the reindeer industry such as herding and driving for men and garment-making for the women.

The family as a subdivision of the village organization under primitive conditions was a very unstable unit. Marriage was usually arranged by the groom's parents who asked for the consent of the bride's parents as the first step in the ceremony. If the bride's parents gave a favorable reply, the groom brought a new outfit of clothing for the bride and when she had arrayed herself in it the ceremony was completed. Since the young people rarely had a house or any utensils of their own, they usually stayed with the parents who most needed their help.

Polygamy was permissible but was not generally practiced except by the more wealthy hunters who by their exceptional prowess were able to support more than one wife. Where there was more than one wife, the first wife had authority over those who came later.

Divorce was easy to obtain by a husband on the grounds of "nagging" and by the wife on the grounds of non-support.
The shaman settled the case. Where families were disrupted in this manner, either party was free to marry again immediately. If there were children, they usually went with the mother or to either or both of the grandparents.

A husband usually dealt with a wife's infidelity by beating her first and then dealing with the male offender as he saw fit. However, a host frequently loaned his wife to honored visitors, and close friends exchanged wives for short periods of time as a symbol of their friendship. These practices, together with marriage between cousins, complicated the problem of relationships beyond solution.

Unmarried persons of either sex were free to participate in sexual relations without the disapproval of the community. If offspring resulted under such circumstances, they were usually eagerly adopted by childless couples in order to escape disgrace by not having someone to represent them in a festival called the "feast for the dead." In this festival, the spirits were supposed to return to receive gifts of food and clothing prepared for them by their descendants.

During famine, which sometimes occurred during the winter, children were not so welcome. They were often carried out on the tundra and allowed to die from exposure. If the famine became very serious, all female children under six or eight years of age were put to death.
Cannibalism, however, is not known to have been practiced among Alaskan Eskimo.

Since the establishment of the laws of the United States in Alaska, many of the old social relations connected with primitive family life have been abandoned. Marriage among Eskimo is now subject to laws of the Territory, and divorce is not as common as it formerly was. Sometimes when a couple want to be married but are too far from a United States Commissioner to get a license immediately, the missionary performs a ceremony without a license and admonishes the couple to get a license as soon as possible. Cousin marriage is less common, and the trading and loaning of wives has ceased altogether -- except in isolated localities where such practices can be concealed from government officials. Young married couples still frequently live with their in-laws until they can afford a house of their own.

In spite of the efforts of the missionaries to abolish the celebration of the "feast of the dead," this festival is still celebrated in some places. Since the danger of serious famine has largely been overcome by the advent of the reindeer, the custom of adopting children has become more popular than ever. With the passing of famine has also passed the practice of infanticide.
An illegitimate child and its mother are not yet stigmatized by Eskimo public opinion, but missionaries usually try to force marriage in such cases.

Since the beginning of the work of the Bureau of Education in Alaska in 1890 under the direction of Sheldon Jackson, there has been a constant and continued effort on the part of the employees in this service to assist the Eskimo to become a socially efficient individual. In spite of the numerous difficulties involved in an endeavor to adapt a primitive people to modern social conditions, much has already been accomplished.

Every schoolhouse is a community center where the people can meet to present their problems for open discussion. The teachers are engaged not only in the instruction of academic subjects but in helping with advice and suggestions in the solution of the problems which daily confront the Eskimo.

For the protection of the village as a whole and as a means of assisting those individuals who are not capable of making certain decisions for themselves, many villages now have a council composed of a group of Eskimo men elected by the population of the village. Through the cooperation of the teacher and the council, a constitution and bylaws are adopted by which many of the problems of the village are solved. The adoption of the village council plan helps not
only the solution of immediate community problems but also
in the development of knowledge, understanding, and respect
for the laws of the territory as a whole.

SUMMARY OF CHAPTER X

PRIMITIVE AND MODERN SOCIAL RELATIONS

1. Owing to the lack of a centralized government and
adequate means of travel, transportation, and
communication, there was little coherence and a great deal
of hatred among primitive Eskimo tribes.

2. Through the unifying force of the United States
Government as represented in the educational influence of
the schools and the enforcement of law, the tribal wars
have ceased and trade has taken their place.

3. Since the adoption of the Christian religion
conflicts with many rites connected with the village
"potlatch," this form of inter-village activity is
gradually dying out to be replaced by reindeer fairs and
church conventions sponsored by employees of the Bureau of
Education and missionaries.

4. The chaos which existed in family relationships
under primitive conditions has been reorganized upon the
plan generally approved by the laws of Alaska and by
missionaries and teachers who have been influential in
effecting the change.

5. During the last forty years the social relations of the Eskimo have evolved from those of barbarism to those of a law-abiding community such as would be commonly acceptable in the United States. The most recent phase of this development has been in the creation of a village council of Eskimo to safeguard and advance the best interests of the community.
CHAPTER XI

GENERAL SUMMARY

The various educational influences which have been discussed in this study have eradicated many of the barriers between the tribes of the Alaskan Eskimo through the establishment of more efficient methods of communication, trade, and travel.

Owing to the extinction of the caribou along the coast, this animal no longer furnishes the abundant food supply for the Eskimo that it did under primitive conditions. Other forms of food used by primitive Eskimo such as rotten fish, herring eggs on seaweed, and roots have gradually fallen into disuse as the result of the substitution of some of the foods of the white man in the diet of the modern Eskimo.

The most important addition to the diet of the Eskimo has been reindeer meat which is now used to a large extent as a substitute for the caribou meat now unavailable.

Owing to the fact that gardening has been only recently
introduced, many Eskimo have not yet learned the value and importance of garden products. However, through the efforts of Bureau of Education teachers in explaining the relative nutritive value of different foods, the various garden products are rapidly gaining in popularity among the Eskimo.

The Eskimo no longer wears all fur clothing. Parkas, boots, caps, and mittens are still made of fur, but all other garments are made of cotton or wool. The fur garments are still made by hand in much the same style as was formerly used, but the process is much easier because of the use of modern needles, thread, and knives. Many children's and women's garments are made by hand also, but the men buy practically all of their garments from the store except those made of fur. The ignorance of "store clothing" values, which was so common during the Eskimo's early contact with the white man, is fast disappearing through the school training in this branch of domestic science.

Through the introduction of new building materials and methods by teachers and missionaries, the Eskimo in many villages have abandoned the underground igloo and the skin tent for the log cabin and canvas tents. The adoption of such devices as stoves, glass windows, wire screens, and mosquito nets has made the new type of dwelling a more
comfortable place to live in than the primitive model.

By teaching the Eskimo the use of new methods of using new materials and devices in the old occupations of hunting and fishing, the teachers, missionaries, and traders have enabled the Eskimo to procure a more abundant supply of food, clothing, and better habitations than was possible with the methods and materials formerly used. The surplus fur and fish resulting from improved methods and implements are also given in trade at the village store for many useful articles never possessed by the primitive Eskimo.

The occupation of reindeer herding which was introduced by the Bureau of Education now offers a new field of activity by which the Eskimo may obtain an abundant supply of food and clothing. With the beginning of reindeer meat canneries and cold storage plants near a few of the larger herds, the surplus supply of reindeer is starting to furnish the Eskimo with money in exchange for his meat. With this money, he can purchase from mail-order houses many articles which are not usually found in the stock of a small trading post.

The quantity of white man's food now available in many Alaskan trading posts has encouraged the Eskimo to substitute "store food" for some of his primitive foods. The Bureau of Education is constantly endeavoring to
educate the Eskimo along dietetic lines.

By the introduction of modern materials and devices in his dwellings, the Eskimo is making his home more and more like that of the white man.

Contact with the white man has given the Eskimo many diseases which he did not have under primitive conditions. The Bureau of Education is trying through its medical employees and teachers to eradicate disease and teach the native to overcome the many unfavorable environmental conditions which he has been unable to conquer.

A serious obstacle to the cultural advancement of the Eskimo is the inadequacy of his native language to meet the needs of a civilized mode of life. This handicap is being overcome to a large extent by the work of the Bureau of Education schools in giving both children and adults the training which they need in speaking, reading, and writing the English language.

Through the efforts of the various missionaries in Alaska, many Eskimo villages have rejected their old religious taboos and shamans and have become members of Christian churches. By enabling the natives to read the Bible and other religious literature, the schools have been a valuable adjunct to the work of the missionaries.

Many of the social restrictions which existed for the primitive Eskimo have disappeared through the educational
activities of teachers and missionaries. Where once there was a distinct line of demarcation between Eskimo tribes, there is now so much intermingling and intermarriage as to almost completely erase all tribal differences except those of dialect. Even the language barriers are slowly crumbling under the force of the common knowledge of English learned largely in the Bureau of Education schools.

The old social life of the village which included feasts and dancing and miracle performances of the shaman in the "kashim" have generally fallen into disrepute. The community life of the modern Eskimo village is centered about the school and the church with reindeer fairs, games and contests, church conventions, and community singing. The old "kashim" is now used for a workshop and bath-house.

One of the important developments which has originated recently in Eskimo communities is the village council which tries to safeguard and advance the best interests of the community. A functioning Eskimo village council is the product of an organized, law-abiding community which has within a comparatively short time been changed from a society ruled by superstition and trickery.
CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

The material contained in the foregoing chapters warrants the following conclusions:

CHAPTER II

1. The unification of the Eskimo tribes of Alaska under the influence of education has been beneficial to the Eskimo through the elimination of warfare and the establishment of greater freedom in communication, trade, and travel.

CHAPTER III

1. The primitive form of diet was more healthful for the Eskimo than a diet composed of some of the denatured, devitalized foods of the white man.

2. Through education, the Eskimo is learning to improve his diet by addition of garden vegetables, reindeer meat, and whole grain products.

CHAPTER IV

1. The work of making clothing has become easier and
more efficient by the adoption of the white man's implements and materials.

2. By giving instruction in the relative values of different kinds of "store clothing," the teachers have enabled the Eskimo to get greater value for their trade goods.

CHAPTER V

1. By teaching the Eskimo to use modern tools and building materials, the teachers and missionaries have aided him in the construction of a better home.

2. Through the adoption of modern heating and lighting devices, the Eskimo has been able to make his present home better than the old igloo.

3. Although the modern log cabin is superior to the igloo in many respects, the use of the cabin, which is more difficult to heat, has in some localities developed a fuel problem which has not yet been satisfactorily solved.

CHAPTER VI

1. The education of the Eskimo in the use of modern methods, materials, and implements has benefited him by enabling him to catch more fish and fur-bearing animals with the proceeds of which he is able to purchase an adequate supply of food, clothing, implements, and means of recreation.
2. Teaching the Eskimo to understand and obey the game laws has benefited him by protecting the trapping industry and has prevented the extinction of valuable fur-bearing animals.

3. One of the greatest gifts of the Bureau of Education to the Eskimo has been the reindeer which at present provides the necessities of life and promises to bring large financial returns in the future.

4. By instructing the Eskimo in the methods of gardening, an opportunity has been given to obtain health-giving foods which will help to eradicate many of the now prevalent dietetic errors.

5. The training which the Eskimo child receives in school is of great benefit to him in the pursuit of several new occupations in which he would be unable to compete successfully without the training which the schools give.

CHAPTER VII

1. Education is the most important factor in enabling the Eskimo to determine which are and which are not healthful foods, clothing, and habitations.

2. The education of the Eskimo regarding the nature of disease, its cause, its cure, and its prevention, is necessary to prevent his own annihilation and the creation of a menace of disease to the white population of Alaska.
CHAPTER VIII

1. Owing to the inadequacy of the Eskimo language under modern school conditions, it is necessary for the Eskimo to be taught the English language.

2. The value of an education in English far surpasses that of an education in Eskimo because of the greater utilitarian value of English in various occupations and social relations and because of the greater recreational value obtained through reading.

CHAPTER IX

1. If Christianity is a better religion than the system of taboos and superstitions of the primitive Eskimo, then the Eskimo has been benefited to the extent that Christianity is better.

2. Regardless of the intrinsic value of the old and new religions, the Eskimo has been benefited by examples of clean and wholesome lives led by some of the Alaskan missionaries.

CHAPTER X

1. The establishment of a friendly relationship between warring Eskimo tribes is a commendable accomplishment of the teachers and missionaries of Alaska.

2. The substitution of wholesome inter-village activi-
ties such as reindeer fairs and religious conferences is a marked improvement over the "potlatches" which frequently resulted in a prolonged period of gluttony followed by a famine in the village where the festival was held.

3. Taken as a whole, the social relations of the modern Eskimo are upon a much higher plane than existed among them during primitive times.

In general, it may be said that the Bureau of Education, the missionaries, and others have succeeded in two generations in effecting many valuable changes in the life of the Eskimo, changes which have required many centuries to accomplish in the progress of our own civilization.

RECOMMENDATIONS

On the basis of the conclusions given above, the following recommendations are offered:

1. That larger appropriations be made for the work of the Alaska Road Commission in order that the condition of trails be improved and that more shelter cabins be constructed between villages to facilitate winter travel and communication.

2. That pamphlets be printed in the government printing office for distribution among the Bureau of Education school
libraries. Information concerning the following subjects would be useful:

a. Relative nutritive values of various foods and proper methods of preparation.

b. Relative values of various clothing materials and proper methods of clothing construction.

c. Methods of house and boat construction with instruction concerning the proper use of woodworking tools.

d. Fire arms, traps, and proper methods of caring for pelts of fur-bearing animals.

e. Reindeer herding.

f. Gardening.

g. Prevention of disease and care of the sick.

Information contained in these pamphlets would be of enormous value to the teachers in helping the Eskimo solve many of the problems of everyday life.

3. That larger appropriations be made by Congress for the Alaska Division of the Bureau of Education in order that more schools, teachers, hospitals, nurses, doctors, and dentists could be maintained for the work among the natives of Alaska.

4. That larger appropriations be given for the work of the United States Biological Survey for the study of methods
of handling reindeer and means of eliminating the parasites and diseases with which the reindeer are afflicted.

5. That experiments be conducted to discover a cheap and efficient method of converting the constant winds of the coastal regions into light, heat, and power.

6. That the work of the Bureau of Education for the natives of Alaska be given more publicity in order to stimulate greater interest and greater support for its educational projects.
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