HISTORICAL FACTORS AFFECTING FOOD CONSUMPTION PATTERNS IN NORTHERN CANADA: I THE INUIT

A report prepared for the Northern Social Research Division
as per Contract No. OTT-78-085

Prepared and submitted by:
Ron Duffy
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CHAPTER ONE

INTRODUCTION

1.1 The research problem

The purpose of this report is to describe and explain the impact of various historical factors on the food consumption patterns of the Inuit of the Canadian Arctic. There is wide recognition that the dietary habits of the Inuit are very different today from what they were in earlier times, but there is no such clear recognition of the transitional stages through which food consumption patterns have passed since the first sustained contact between the Inuit and the white man, nor of the most significant factors responsible for the changes. This report therefore deals with three basic questions:

(1) What were the food consumption patterns of the pre- or early post-contact period when the Inuit still lived under their traditional cultural system before it was changed utterly through contact with Europeans, southern Canadians and Americans?

(2) What changes in food consumption patterns resulted from increasing contact with non-Inuit peoples and from the accelerating introduction of non-Inuit cultural elements and activities?

(3) What were the attitudes of those responsible for

the administration of the North and its people to changes in the dietary habits of the Inuit, ans what changes did the administration itself bring about as a result of official policies initiated in response to awareness of change?

The first question provides a descriptive base for identifying the traditional patterns of Inuit food consumption and for reaching an understanding of the cultural meaning of these patterns. In this context one must bear in mind that food preferences and habits are an important part of any cultural heritage.

> In a society where hunting is a central tradition, foods have a richness of meaning which stems from their procurement, distribution and preparation, as well as their eating. There are special ways of eating native foods which are reflected in sitting arrangements, implements used, and the distribution of the food, and are important not only to the individual but to the family. The provision of frozen beef cuts to replace muktuk, caribou ribs, frozen fish and ptarmigan soup would destroy these arrangements just as surely as would the provision of beans and bread as substitutes. Country food has nutritional, social and cultural values which cannot be replaced by any substitute and cannot be measured by market criteria or evaluated in cash. In short, food is an integral part of a way of life.
>
> (Usher 1976:118)

The second question provides an analysis of change and its consequences in terms not only of new patterns of food habits but, with regard to Usher's views expressed above, of new patterns of group living and preferred or obligatory lifestyles. Specifically this part of the report

will address itself to the introduction of new ways of life and livelihood by Europeans and North Americans and to the associated changes in the procurement, distribution and consumption of food. Whaling, trapping and general wage employment were the new livelihood forms adopted by the Inuit, and for those who could not find work in these new activities sufficient to support themselves and their families the trading companies and the federal government gave out relief issues of food, clothing and other necessities. Other important cultural changes introduced by the government, which affected Inuit food consumption patterns, included the payment of Family Allowances and pensions and the provision of education, health facilities and other forms of social welfare.

The third question deals with the impact of these government policies on the food habits of the Inuit. Responsible since the passing of the British North America Act in 1867 for providing medical care to Indians and Inuit, the Canadian government was sensitive to any cultural changes that affected the health of the native people and the costs of looking after it. Official attitudes to the diet and nutrition of the Inuit found expression in policies designed specifically to bring about changes in the eating habits of the native people so as to improve their general health conditions and reduce the escalating cost of medical care. Surveys of food habits and analyses of both traditional and introduced foods were undertaken, instruction in nutrition and food preparation was made an important part of both

school curricula and adult education classes, and the kinds of food allowed to the Inuit under various forms of social welfare assistance were strictly controlled.

1.2 Background to the problem

In recent years there has been a rapid growth of nutritional research in the Arctic (Draper 1976). This has been stimulated by the accelerating erosion of aboriginal cultures which created an urgent need to obtain data on population isolates still living under the influence of traditional food consumption patterns. At the same time evidence has accumulated of significant malnutrition among populations of generally affluent societies and that within such societies malnutrition is most prevalent among minorities subject to rapid cultural change. This situation exists in Canada. Nutrition Canada reports (Canada, Department of National Health and Welfare 1974, 1975) have suggested that Canadians in general have low standards of nutrition, but that in some aspects of nutritive health the lowest are those of the native peoples, with the Inuit faring worst of all. However, it must be admitted that in some aspects of Inuit health and nutrition the Nutrition Canada surveys exaggerated the poor condition of the Inuit. In particular, the claim by Nutrition Canada that Inuit adults of both sexes were at greatest risk in regard to obesity has been shown to be inappropriate (Schaefer 1977). It is true that rapid changes in lifestyle and eating habits have had

a seriously adverse effect on the health of the Inuit, but the government dietician who worked on the Nutrition Canada surveys and who was reported in the press as declaring that the Inuit 'have a more severe health problem than any other group we've studied'[1], may have been overstating a case based on insufficient background knowledge and only a few days' work in the Arctic. However, Nutrition Canada did find serious deficiencies of vitamin C among Inuit of all ages, with more than half of the adolescents and two thirds of the adults affected, and of iron, particularly among children, adolescents and pregnant women. The level of intake of calcium and vitamin D was poor in the population in general, and over 60 per cent of adult Inuit suffered from low levels of serum folate, a condition leading to anaemia which is further aggravated by the deficiency of iron. Recognition of the inadequacy of the northern diet spurred the government to supply multivitamin-mineral tablets to people served by Indian and Northern Health programmes[2].

The irony of the situation is that such an expensive solution to the problem of poor nutrition in the Arctic appears to be quite unnecessary. The best solution may be to increase the proportion of country foods in the diet. Surveys done by the Northern Medical Research Unit and by other groups have shown that native foods gathered from the land contain much more iron, vitamins and minerals needed to maintain health than those foods bought from local stores[3]. Such surveys showed that northern native peoples were able

to obtain from their traditional diets all the necessary iron, vitamins and minerals, while nutritional deficiencies, anaemia, malnutrition and obesity were increasingly found in population groups with little or no reliance on native food resources. This is a position long held and defended by Dr Otto Schaefer of the Northern Medical Research Unit in Edmonton. He has travelled widely in the North advocating a greater use of country foods. 'If we got only 20 to 30 per cent of our food supply from native meats and fish,' he told an audience in the YWCA at Whitehorse on 7 July 1975, 'we would have all the protein we really need'(4). Vitamin C, one of the deficient vitamins in the modern Inuit diet, was also available in native meats but was destroyed by cooking. Inuit who ate raw meat got the maximum vitamin C in their diet(5). The nutritional value of country food depends on the condition of the animal at the time of the kill and hence varies from season to season and place to place as well as from the methods of preparation and consumption (Usher 1976:115). Nevertheless, Stefansson (1936, 1960) showed in a famous experiment that raw meat on its own was able to supply all of man's dietary needs and maintain his body in excellent health. In 1948 the chief nutritionist of the Department of National Health and Welfare wrote that it was 'quite possible to live on a protein diet and be satisfactorily nourished; in fact, I believe that the more nearly natives can be kept on a native diet which is predominantly protein in nature, the better health they will

have'[6]. However, most Inuit groups in the Canadian Arctic were able to supplement their meat supplies with berries, seaweed or other plant material and thus obtain everything they needed nutritionally to maintain their health (Porsild 1945).

The background to the problem of changing food consumption patterns in northern Canada is thus one of rapid acculturation of the Inuit, their concentration into centres of high population growth, their acceptance of the food habits of the southern Canadian population and the adverse effects of these food habits on their health and well-being. The problem of deteriorating food habits is not confined to the Inuit but affects all Canadians to a greater or lesser degree. It is, however, most acute among the Inuit and other residents of the North. These include large numbers of white southern Canadians, but the southerners have learned to cope more effectively with the food problems in the arctic settlements. This was brought out in a study of the nutritional needs and habits of the community of Frobisher Bay by the so-called Food Talk Project which published its findings in the summer of 1977[7]. These showed that the Inuit and non-Inuit had different eating and food-buying habits and faced different nutritional problems. The non-Inuit relied extensively on the sea-lift and air-freight services to obtain a good choice of foods at reasonable prices. Most Inuit did not use these methods because they did not know the ordering procedures and were unfamiliar

with the foods to be ordered. Furthermore, the budgeting required for such advanced ordering was not a common Inuit practice. 'The Inuit have reached a transition in their lives where they are supplementing a wild food diet -- seal, caribou, fish, muktuk, duck, etc. -- with store-bought foods. It is essential that... store-bought foods meet the nutritional needs of Inuit and be priced reasonably' (Ibid).

This report discusses the significant historical factors that affected the food consumption patterns of the Inuit, causing the native people to abandon traditional eating habits that met all their nutritional needs and to adopt those of the immigrant southern Canadian cultural system that led to dietary deficiencies, disease, obesity and malnutrition.

1.3 Methodology

The methodology used in the preparation of this report is taken from the general field of ecology. W. C. Allee and his associates (1949:1) have defined ecology as 'the science of the interrelation between living organisms and their environment, including both the physical and the biotic environments, and emphasizing interspecies as well as intraspecies relations.' Though devised with animal ecology specifically in mind, this definition of ecology does not exclude its application to human populations if the cultural environment is added to the physical and the biotic. Central

to ecology in its application to both animal and human populations is the study of behaviour. The behaviour of animals, Nissen (1958:185) has argued, is a major contributing factor for their survival. 'Maintaining favorable relations with the environment,' he writes, 'is largely a function of behavior', and behavioural incompetence 'leads to extinction as surely as does morphological disproportion or deficiency in any vital organ.'

The fundamental behaviour in both animal and human populations is the acquisition and consumption of food energy. This behaviour will largely determine the social organization of the groups involved, so that ecology is not only a behavioural but a social science. Allee's subtitle for his book on animal ecology published in 1931 was A Study in General Sociology. Among human sociologists Amos Hawley (1944:399) recognized ecology as 'basically a social science,' a fact apparent, he stated, in almost every aspect of the discipline.

In applying an ecological methodology to the study of human populations the anthropologist Julian Steward (1955: 40-41) claims that the 'behavior patterns involved in the exploitation of a particular area by a particular technology' will affect all other aspects of culture. This is the basis of Steward's cultural ecology. But because ecology stresses interrelations among variables, the behaviour patterns involved in subsistence techniques may in turn be affected by changes in other aspects of culture, and the associated

patterns of food acquisition and consumption consequently altered. The relevance of an ecological methodology to the present study is thus apparent. While stressing the interrelationship of the natural environment and the main components of the cultural system one can analyze the changes in Inuit food consumption patterns in terms of those historical factors responsible for changes in the main components of the cultural system, namely: subsistence behaviour, technology, informational input and social organization.

1.4 Data and background studies

Major changes in the cultural system of the Canadian Inuit began through contact with representatives of European and North American cultural systems and the Inuit adoption from them of many exotic elements. Most important were new elements of material technology, new sources of energy and materials, alternatives to hunting as a means of livelihood, and a world view which conflicted with the traditional beliefs and ideology of the Inuit. These major cultural changes in the Arctic were reflected in changes in food acquisition and consumption patterns and hence in patterns of morbidity and mortality. There is no single comprehensive study of these cultural changes as they relate to food habits and nutrition. In fact, there are few published studies that concentrate on Inuit food habits as a subject of interest in its own right. The majority of papers detail some medical or dental consequences of the contemporary

Inuit diet. Among the earliest were Heinbecker's metabolic studies of 1928 and Waugh's more general report on the Labrador Inuit in the same year which, however, emphasized dental hygiene. In similar vein are the works of Wells and Heinbecker (1932), Price (1936), Rabinovitch (1936), Rabinovitch and Smith (1936) and Williams (1940). It seems that the only reason for doing research on Inuit diet and for publishing the results was to illustrate some ill effects of northern food habits or to compare the healthful traditional foods with the harmful tendency to consume larger and larger quantities of carbohydrates in adopting the poor diet of the white North American. Schaefer's (1959, 1964, 1971) publications are largely of this kind, as are the similar papers by Thora Mills (1976) and Sayed, Hildes and Schaefer (1976a). Davies and Hanson (1965), who carried out interesting research among the Central Arctic Inuit, include medical work in their publication, especially measurements of haemoglobin level and metabolic rates, but they also give much useful information not only on native diet by season but on environmental factors and living conditions like homes, clothing and water supply. Kemp (1971) does the same for the Inuit of the south coast of Baffin Island. Studies of Inuit nutrition as a subject in its own right are confined to those by Cremeans (1930), which deals with the small St Lawrence Island population using data supplied by O. W. Geist of the Bunnell- Geist expedition of 1926-29; Sinclair's brief paper of 1953; and Stefansson's contribution to Galdston (1960). Cremeans includes details

of what imported foods have been incorporated into the Inuit diet, and both Sinclair and Stefansson give warning of the malnutrition and associated ill-health that appear to accompany the adoption of Euro-American foods as part of the accelerated acculturative changes in the 1950s. Yearsley (1960) concentrates on the many new foods that have been imported into the North as a result of these changes, on what the Inuit are doing with them, and on what can be done with them using a little knowledge and imagination to improve the diet of the northerners. Moore, Kruse and Tisdall's (1943) paper on nutrition in the North concerns the bush Indians of northern Manitoba; Rodahl's (1950) paper, entitled 'Arctic nutrition', refers to northeastern Greenland; the paper by Robertson et al (1953) on improving nutrition at Hudson's Bay Company northern posts deals with the problems of white employees; and Scott and Heller's contribution on the nutrition of a northern population to a Geneva conference in 1962 is confined to the Indians and Inuit of Alaska.

For the earliest descriptions of the more traditional Inuit foodways one has to search the published reports of anthropologists, explorers, adventurers, most of which has been conveniently summarized by Weyer (1932:52ff). Some of these books -- for example, those by Hall (1865) and Boas (1888) -- give snippets of information on new foods introduced into the arctic cultural system by the whalers, as do whaling histories like those of Lubbock (1937), Ferguson (1938) and many others. Reading these sources in conjunction with

those already cited, a picture begins to emerge of the full extent of change in the food consumption patterns of the Inuit.

But the richest source of information on changing dietary habits in the Canadian North are the unpublished documents in the Northern Administration record group of the Public Archives in Ottawa. Some 300 of these official documents -- memos, letters, reports, policy statements -- were consulted in the preparation of this report. They are identified at the end of each chapter by the Public Archives call number, RG 85, followed by the volume number of the box in which the document is stored and the file number in which it is located -- for example, reference (6) below. By far the greatest amount of material used in this report comes from official documentary sources, material written over a period of about seventy years by people whose responsibility was the administration of the Arctic and the well-being of its inhabitants.

The use of this archival material, however, is not without its own peculiar perils for the modern researcher. Many of the white people involved in medicine, police work, administration, missionary service and trading in the Canadian Arctic could not all hide their basic personal feelings of sophisticated superiority to the Inuit under a smooth and smiling surface of paternalistic benevolence. This secret underside of their nature tended to blame much of the natives' misfortune on their own alleged improvidence,

carelessness, laziness, indolence, and shiftlessness. This point has been raised and emphasized in a personal communication from Dr Otto Schaefer. Dr Schaefer has the advantage of having known in person many of the people whom researchers know only as the authors of reports, memos and letters sent to Ottawa and Montreal from stations in the Arctic and now stored in the Public Archives. All too often these people attributed to the Inuit in general the pejorative characteristics listed above and this tended to bias their opinions unfavourably. For example, the Caribou Inuit of the Keewatin and the Bathurst Inlet-Contwoyto Lake area were often contrasted as fatalistic, lazy and shiftless with the more enterprising, individualistic and self-reliant Coastal Inuit, whereas others less biased found that much of the 'hopeless laziness and shiftlessness' of the Inuit of Eskimo Point, Bathurst Inlet and other centres was due to their having been stricken with more sickness of all kinds and especially with tuberculosis. This was due to a lowering of resistance brought about by more frequent episodes of semi- or full starvation that resulted from the severe decline or temporary disappearance of their main source of food: the caribou. Coastal Inuit on the other hand were naturally less affected. Many northern officers must be rejected as reliable witnesses because they travelled little or not at all in the field and tended to buttress pre-judgements based on colonialistic superiority with material from the second-hand reports of others selected on criteria that suited their biased opinion of the shiftless

native who blamed everyone but himself. One Medical Officer is known to have refused to visit sick Inuit in their camps. He demanded that they be brought to him and then blamed surviving family and camp members for the death of their children and old people. He overlooked the fact that there was often nobody left in camp strong enough to hunt and prepare food, let alone transport the sick.

A researcher today can benefit from the advice and criticism of men like Otto Schaefer who were deeply involved in the North and who can help put the sometimes skewed and prejudiced record into proper perspective. A few valuable witnesses who can throw some light on this aspect of native history are still alive, and in the preparation of this report the assistance of Dr Schaefer in this respect, and in other areas where his professional insight has been most valuable, is gratefully acknowledged. But for the most part and in particular for the earlier periods no such corrected perspective is possible. The reader must beware of the possibility of biases being incorporated in reports and monographs that use official material from the Public Archives. These biases may simply reflect opinions generally held at the time or may derive from personal and institutional shortcomings and interests. The Inuit themselves have unfortunately not yet reached the stage of writing long reports about the quaint and strange and -- to them at least -- often illogical and insensible, if not outright mean and destructive, behaviour of whalers, traders, policemen, missionaries,

medical personnel and government administrators. To be able to break this almost complete silence from the Inuit, to be able to repair the absence of reflection of the culture-contact experience from the native side, might change substantially the picture that the cited accounts have produced.

1.5 Notes and references

(1) The Drum, 22 February 1974, p. 5.

(2) News of the North, 23 July 1975, p. 20.

(3) Yukon Indian News, 23 February 1977, p. 15.

(4) The Drum, 10 July 1975, p. 8.

(5) Yukon Indian News, July 1975, p. 11.

(6) Letter from L. B. Pett, Chief of Nutrition Division, Department of National Health and Welfare, to J. G. Wright, Chief of Arctic Division, Department of Mines and Resources, d. 16 November 1948 (RG85, Vol. 1037, File 802).

(7) Nunatsiaq News, 14 July 1977, p. 19.

CHAPTER TWO

ECOLOGICAL FACTORS

2.1 Introduction

The fundamental behaviour in both animal and human populations, as stated in Section 1.3 above, is the acquisition and consumption of food energy. Among human populations one must add to food energy for human consumption the fuel energy that man's mechanical technology uses. The behaviour associated with the acquisition and consumption of energy of whatever kind may be termed man's ecological adaptation. In primitive self-sufficient hunting and gathering and agricultural societies energy requirements are satisfied through direct exploitation of the environment. As societies become socially and technologically more complex economic arrangements -- systems of exchange involving sharing, gift-giving, markets, wages, taxes, debts and financial institutions -- intervene between man and his direct exploitation of the natural environment for food.

In the Canadian Arctic this cultural evolutionary sequence occurred rapidly. It occupied no more than a century and in many parts of the region even less. Until the mid-nineteenth century the Inuit lived in self-sufficient hunting groups distributed along the arctic coasts, with small populations inland in certain areas of the Central Arctic.

With the coming of the whalemen to the Eastern and Western Arctic some Inuit began to work seasonally for the outsiders for some material reward. Large-scale abandonment of the traditional self-sufficient ecology followed later, after the introduction of the fur trade that succeeded whaling in the Arctic. During the Second World War, and more particularly after the collapse of the world fur market in the immediate post-war years, more and more Inuit took up various forms of wage employment. Those who could not support themselves and their families through hunting, trapping or wage employment were issued with relief. Each of these forms of ecological adaptation, being different ways of acquiring and consuming food energy, had a direct impact on the dietary habits of the Inuit.

2.2 Hunting

Archaeologists like Collins (1954) and Taylor (1966) have stressed the dual inland-coastal nature of prehistoric Inuit ecologies. They were not, as is sometimes assumed, two rigid, sharply defined, mutually exclusive categories, with all caribou-stressing subsistence occurring in the interior, and all coastal sites dependent solely on sea-mammal hunting. The archaeological evidence suggests a mixed caribou-sea mammal ecology with wide local variations in each major prehistoric and historic group. There are few exceptions to this. The traditional Inuit ecology was

neither inland- nor coastal-adapted but Arctic-adapted (Taylor 1966:117).

The game and fish resources of the biotic environment of the Arctic and Sub-Arctic, for reasons other than climatic, vary greatly from place to place, season to season and year to year. So in one part of the Arctic, because of special conditions, a certain kind of game may be hunted by a particular method while in some other parts, because of other sets of conditions, the same techniques may prove quite worthless. In spite of this some broad generalizations are possible (Porsild 1945). In the Eastern Arctic, as in Greenland, land animals are few, and rivers and lakes as a rule cannot be depended on to supply fish. On the other hand the sea is comparatively rich in animal life. In the northern Arctic islands land game is scarce and the sea is also low in animal life. Over large areas of the continental Northwest Territories land game is likewise poor, but the lakes and rivers are generally well stocked with fish. In the Yukon, as in Alaska, the supply of game animals is larger and more varied than anywhere else in the North because, in general, mountainous country affords more varied conditions for game than does a low level country. Finally, shallow and ice-bound seas are less productive of animal life than is moderately deep water with pronounced tides and currents. Therefore the Inuit are more numerous in the Eastern Arctic and in Greenland than in the Arctic Archipelago.

The vegetation of the Arctic could not on its own support

human life, being made up of lichens and mosses, sedges and rushes, grasses and low-growing shrubs, mainly heaths. The typical tundra vegetation over much of the Arctic is a cotton grass-sedge-dwarf heath complex (Hanson 1953). No true arctic plant is poisonous and all are possible sources of vitamins, but the short growing season and cool temperatures make total dependence on plants as a source of food impossible. Plants are eaten as supplements to the almost totally carnivorous diet and supply additional vitamins to those available from the raw flesh and internal organs of animals (Porsild 1953). This was reported by the first Europeans ever to see the Inuit: those who sailed to Baffin Island with Martin Frobisher. One of Frobisher's officers noted that when meat was scarce 'such grasse as the Countrey yieldeth they plucke up and eate, not deintily or salletwise to allure their stomachs to appetite: but for necessities sake without either salt, oyles or washing, like brute beasts devouring the same' (Settle 1577:224). Another of Frobisher's company observed that 'Their earth yieldeth no graine or fruit of sustenance for man or almost for beast to live upon: and the people will eate grasse and shrubs of the ground, even as our kine doe' (Anon 1578:372-373). This may have been a reference to the eating of willow leaves which Dr Schaefer claims were picked as a source of vitamin C[(1)]. The richest plant sources of vitamin C, however, was not willow leaves but sourdock (Ibid). In winter and spring the buds of creeping willow were available. Berries in fresh, dried or frozen forms were probably, besides meat and fish,

the most important sources of vitamin C and minerals for the northern Indians but of lesser importance for the Inuit, especially in the Eastern Arctic. The Inuit of the Eastern Arctic ate more raw meat and had access to seaweeds, often all year round, as a source of vitamin C. Altogether the seaweeds, sourdock, willow leaves and buds along with other tundra plants provided excellent sources of vitamin C, iron, calcium and other minerals. But plant foods were marginal in the traditional diet of the Inuit, Stefansson (1943:63-64) claiming that they did not always make full use of what vegetable food there was. Instead, they lived almost exclusively on animal food 'almost entirely derived from the sea,' as Professor Robert Bell told a Senate committee in 1887 (Canada, Senate 1887:99). 'Their principal supplies of food are the walrus, seals and whales -- small whales especially, and of land animals they kill the reindeer, but they also eat anything they can get in the shape of fish and birds. They kill large numbers of birds on the sea and spear salmon with spears of their own making.' Asked if there was any danger of scarcity of food, Professor Bell replied:

> No, there is no reason why food should be scarce amongst the Eskimos; but occasionally from exceptional circumstances or by their crowding together in a large number in one place, the area inhabited does not provide food enough for them all. At such times long and unexpectedly severe weather prevents them from hunting, and sometimes reduces them to the verge of starvation; but when they are left alone and scattered about in small bands over the whole country, so that every family can get a share of the

> marine animals that they live upon they have plenty. They are more provident than the Indians of the North-West. They lay up food in advance.
>
> (Ibid:100)

Of the food animals mentioned by Professor Bell seals were the most important to the Inuit in general. Available almost everywhere in the Arctic, the flesh and the fat of all seals is good to eat and the livers, except those of the bearded seal, are choice. Seal provides ideal and practical food, wrote the Medical Officer at Pangnirtung. 'It can be used without any addition to their meals and it seems to be a complete diet in itself. It is a very tasty food and requires no seasoning with the exception of salt. Other foods seem tasteless and... [the Inuit] have told me that they do not care for fish when they can get enough seals'(2). Seal was eaten most of the year from late fall to early summer, with caribou, fish and duck eggs available during the season when it was hard to catch enough seal. The people of Banks and Victoria Islands, of northern Quebec, Baffin Island and the Queen Elizabeth Islands were those who depended most on seals. Seals probably constituted 60 to 80 per cent of the diet in these regions. Even as late as the 1960s at a hunting camp in southern Baffin Island Kemp (1971:110) estimates that seal made up 83 per cent of the annual food supply.

Walrus was another staple among some Inuit, especially among the Polar Inuit, for whom it was the most valuable

animal caught, and among the Inuit around Igloolik and Southampton Island. In these latter areas walrus meat probably made up about 50 per cent of their regular diet. Many of the Eastern Arctic Inuit hunted walrus, but when seals were available, as they were in most places, the walrus meat was eaten not so much by the Inuit as by their dogs.

Polar bear was almost as important as the seal in the diet of the Inuit around Prince Albert Sound and Minto Inlet. Rarely seen on land, the polar bear is a marine animal which, like the walrus, is usually found in drift or pack ice some distance off-shore. The flesh, especially of young polar bears, is excellent, but the liver can be poisonous because of a high concentration of vitamin A.

Seal, walrus and polar bear were eaten more during the winter than summer. In summer the Inuit hunted caribou more extensively than any other food source. These grazing animals have a wide distribution in the Arctic and Sub-Arctic, though they are scarce along the east coast of Baffin Island and Ungava and not plentiful on the larger islands of the Arctic archipelago. By far the largest herds ranged across the great plains between Hudson Bay and the Mackenzie. The Inuit along the mainland coasts of Mackenzie and Keewatin, with the exception only of those around the Mackenzie Delta where fish were the main staple, depended very greatly on caribou, although some of them also engaged very extensively in sealing, especially during the spring months. During the caribou migration certain groups of Inuit depended very

heavily on these animals. Taylor (1966:116) describes a particular Thule site at Lady Franklin Point in southwest Victoria Island where 82 per cent of animal bones were of caribou. Seal made up only 17 per cent and whale 0.15 per cent. But this camp site lies exactly at the spot where, until 1916, the annual crossing of the Contwoyto-Bathurst caribou herd into Victoria Island for summer grazing took place. The camp was established and mainly occupied in order to take advantage of the easy caribou hunting afforded at the time of crossing (O. Schaefer: pers. comm.). It is not representative of other areas or of other seasonal camps of coastal Inuit, even in the western Central Arctic.

Many groups of Inuit used whale meat for food, especially the beluga whale that frequented shallow estuaries where the Inuit could easily kill and retrieve them. The flesh of the beluga is very palatable and the skin, as of other whales, is particularly good to eat either cooked or raw (muktuk).

Fish were important among practically all Inuit except the Polar group. The fish caught were mainly lake trout in the Mackenzie, Yukon and Keewatin, and char or sea trout in the lakes and rivers of the arctic islands and mainland.

Birds and eggs were important locally, as among the Polar Inuit and the Diomede islanders. All sea birds can be used for food, but ducks, murres and other auk-like species are the best. The Medical Officer at Pangnirtung was 'given ... to understand that sea fowl are better when they are "High" according to our standards'(2). The eggs of all sea birds are palatable.

The traditional Inuit diet then was composed of meat and fish and a little fowl, but the emphasis was on sea mammal meat. The Inuit preferred sea mammal meat to all others.

> They delighted in fresh seal meat and whale skin and made the distinctions of a gourmet between the meat of various kinds of seal. Indeed they distinguished between the various cuts, bones and entrails of any one seal and knew how to blend one item with another to give each mouthful the best richness of flavour.
>
> (Brody 1975:130)

The daily and seasonal regimen of the traditional varied geographically across the Arctic. 'It is rather difficult to make any exact statement on [Inuit diet],' wrote the Chief of Arctic Division in 1955, 'as diets vary greatly in different parts of the Arctic and at the various seasons of the year. So much depends also on the resources that are available in the various areas. The following, however, is a general picture of the resources on which the main groups depend. These are given in the order of their importance'(3):

Mackenzie River Delta: fish, caribou, beluga;

Mainland coast of the Western Arctic: caribou, fish, seals;

South coast of Victoria Island: seals, fish;

Keewatin: caribou, fish, seals;

Northern Quebec: seals, beluga, fish, walrus;

Baffin Island: seals, walrus, beluga, fish.

Eating not only the flesh but the internal organs of these

animals, which were considered 'so much a delicacy that the meat is usually left to the last" (Rodahl 1950:54), the Inuit were provided with all the essential nutrients, though supplements could be found in plant forms and seaweeds.

> The natives live upon an exclusively animal diet; but they consume it in larger quantities than could be afforded by us. Their daily allowance of food I should estimate at some twelve to fifteen pounds, about one third of it being fat -- the blubber mainly of the walrus, the seal, and the narwhal. In times of plenty, they eat more than that quantity; in times of scarcity, less. Being exceedingly improvident, and having rarely stores reserved sufficient to supply them during two weeks they are often in want. At such times, however, it must be conceded that they exhibit a commendable spirit of cheerfulness and philosophical resignation; and when they are again successful in the hunt, they make up for lost time by a series of stupefying feasts. I have seen an Esquimau, upon returning from a long and exposed hunt, or when about to commence a difficult journey, eat at a single meal, prolonged through several hours, fully ten pounds of walrus flesh and blubber.
>
> (Hayes 1867:257-258)

A question raised by Stefansson in the late 1930s was the degree to which the Inuit cooked their food and how hot they ate it. Stefansson's own researches in the Central Arctic produced directly opposing replies 'from men of approximately equal reputation, both for observation and for truthfulness', and he sought the help of RCMP officers and others with wide experience of arctic service. The reason for Stefansson's interest in this apparently frivolous question, though he claimed scientific importance for it,

was that he believed that higher food temperatures contributed to tooth decay[4]. Dr L. D. Livingstone, one of the foremost arctic medical specialists of his day, disagreed, claiming that the effect of hotter food would be 'comparatively negligible'[5]. Dr Ross Miller, Director of Medical Services for the Department of Pensions and National Health, was more forthright yet somewhat contradictory when he stated that 'the temperature of the food per se has nothing whatsoever to do with the production of caries, with the possible exception that cooked foods are as a rule more tender in texture than raw foods, and therefore, require less mastication. There is no doubt that a decrease in the amount of mastication interferes with the circulation in the jaws, and the reduction of mechanical cleaning of the teeth by rough fibrous food would be a contributing factor to the production of caries'[6].

Whether the question is of scientific importance or not, the replies received from arctic specialists give an insight into the food preparation practices of the traditional Inuit. The RCMP officer in Aklavik, however, sounded a note of caution in his remark that 'the natives in this area have been in contact with whalers and traders so long that none of the present generation have any reliable information to offer in connection with the cooking habits or dental condition of their more primitive forbears'[7]. However, a concensus of the older Inuit led one to believe that in the Aklavik area, where driftwood was fairly abundant on the coast 'the primitive natives did cook their meat well and eat it at a similar heat as a hotel dinner that is not quite warm enough

for the fastidious diner. Even today it will be noted that these natives do not relish piping hot tea or soups but let it [sic] cool somewhat before drinking it.' Six out of seven traders from the Cambridge Bay area agreed. They 'were very firm in their opinion that the Esquimo does not, as a rule, eat scalding or even hot food'(8). All seven traders interviwed by the RCMP agreed that 'there has been very little, if any change, in the mode in which native food is prepared and eaten now as compared with the older generation. Fish is eaten raw, boiled, dry or frozen. Seal is allowed to simmer over a native lamp all day and both meat and broth are allowed to cool before eating. Caribou is eaten raw, boiled, dry and frozen.' The same was true for the Inuit of the Coppermine area. They liked their cooked food and their blood soup lukewarm(9).

> The reason for this was that the soup or meat took so long to cook with their primitive stone lamps that any intense boiling took too long. Also, that if they took the food too hot in their fingers it would be inconvenient as they used no plates. Also, if we offered them our food straight from our pots they would at once remark "Its [sic] hot".
>
> Such is my recollection of the Eskimos in the year 1915 when they were still primitive.

Among the Inuit of the Queen Maud Sea and Coronation Gulf the RCMP noted that the methods of food preparation depended on circumstances(10). During extreme cold weather when fuel was scarce or seal oil unobtainable the Inuit ate their meat raw and frozen and drank the blood of caribou right out of

the carcass soon after they killed it. In the spring and summer, when moss or driftwood or seal oil were available, they merely parboiled their meat and drank their soup at a lukewarm temperature.

In the Barren Grounds of the Central Arctic Davies and Hanson (1965:212) found that the Inuit had no wood for cooking purposes. They never fried food, and if cooked, it was always boiled or stewed. Often the Inuit ate their meat raw, either fresh or frozen, although polar bear meat was almost always cooked.

In the Eastern Arctic the same preferences were found. For example, Dr C. S. McEuen of the Department of Surgery at the Royal Victoria Hospital in Montreal reported that the Inuit of the Eastern Arctic cooked their food by placing it in a pot of water suspended over a seal oil lamp for four to six hours. 'The temperature of the water, however, remains so low that one's finger may comfortably be placed in it, and, moreover, no odour of the food cooked comes off the pot'(11). Enquiries by the RCMP at Pangnirtung brought forth some conflicting replies, but the general opinion was that the Inuit preferred meat 'slightly cooler than that ordinarily eaten by a white man'(12). This opinion was based on the following observations:

> It has been noted that in the winter season when the hunters are hunting the "Floe-edge" for seals, etc. the women remove the pot, in which the meat for the hunter has been cooking, as soon as she sees the sleds approaching or hears the dogs. It is set

> aside until the hunter has finished his work outside, unharnessing dogs, etc. The contents of the pot are "Fished" out with the fingers usually, and for that reason must not be too hot... On a number of occasions it has been observed that when Eskimos share a meal that has been prepared by a white-man the food is not usually eaten at the temperature at which it has been served. The whiteman usually has begun eating before the Eskimo has cooled, (usually by blowing on the food,) his portion to suit his taste.

The earliest description of Eastern Arctic cooking practices, by Frobisher's officers in the sixteenth century, noted that the Inuit then did 'sometimes parboyle their meat a little' (Anon 1578:372) which indicates a long history of the practice. Settle (1577:224) wrote that 'They eate their meat all raw, both flesh, fish and foule, or something per boyled with blood and a little water which they drinke.'

The obvious limitations on the thorough cooking of meat were the stone lamp burning animal fat and the stone pot, neither of which were convenient or quick. Jenness (1922:98) points out that it took an hour to boil meat with lamp and blubber, even after the snow had been melted. Rasmussen (1927:206) says it took one of the King William Island Inuit as long as five hours to cook a pot of fish and boil a kettle of water using Dryas for fuel. The availability of fuel was obviously another limitation, especially in winter. The typical tundra vegetation does not provide a hot-burning fire. Driftwood and blubber were the major alternatives, but the former was not always available and supplies of the latter often ran out.

2.3 Whaling

The Dutch first carried the whale fishery to the Davis Straits as early as 1719 (Lubbock 1937:82). In the early 1730s the Nantucketeers led the American whale fleet into the same waters and twenty years later the English whale fishery revived and followed the other Europeans and Americans into the Arctic (Stackpole 1953:32). At first the whalers kept themselves mainly to the Greenland coasts, but in 1817 two British vessels crossed to the Baffin Island side and discovered large numbers of whales (Holland 1970:25). Increasingly the whalers made the hazardous passage over Melville Bay to the rich whaling grounds of Lancaster Sound and Pond Inlet. They often explored further south down the Baffin Island coast to Cumberland Sound and about 1860 began to exploit some of the renewable resources of Hudson Bay (Ross 1967:198). Contact with the Inuit was seasonal at first, but in 1851-52 fourteen American whalemen from the MacLellan experimented with overwintering at an Inuit camp in Cumberland Sound (Lubbock 1937:356). The Scots followed their example in the winter of 1853-54 and thereafter the practice became firmly established.

The heyday of the whaling industry was short. By 1880 the Greenland right whale was nearly extinct from overfishing. At this time the Norwegian method of using small steamers and harpoon guns began to supersede the old methods of fishing from whaleboats launched from parent vessels (Savours 1960:

126). Then the demand for the products of the whaling industry declined, most notably the demand for oil for lighting which until 1860 had been the most valuable product of the fishery (Tower 1907:76). Kerosene took over this function of whale oil during the latter part of the nineteenth century. The American whaling fleet, already threatened by substitutes for its products, did not long survive the Civil War and its aftermath. The British ports abandoned whaling one by one till in 1909 only Dundee remained, and the ship-owners of that port could not have survived so long had they not turned to white whales, walrus, seals and bears (Lubbock 1937:450).

The whaling in the Western Arctic declined at the same time and for the same reasons. But the active period in the west was much shorter. Its beginnings go back only to 1835 (Foote 1964:16) and the practice of overwintering in the Western Arctic is not known to have begun before 1862-63 (Ibid: 18). Stefansson (1913:46) records that the first whaling ship reached Herschel Island in 1889 and this remained the centre of the Western Canadian Arctic whaling till 1908 when only one ship wintered there (Ibid:197). During this time a close association developed between the Inuit and the whalemen with sometimes as many as a dozen ships and 400 to 500 men wintering at Herschel Island (Stefansson 1936:4).

The whaling period is thus short in the history of the Canadian Arctic, yet its impact on the Inuit was profound. Stefansson (1913:47) claims 'that although the time from 1889 to 1906 is but a few years, still there has been greater change

wrought among the Eskimo during that time than the Hudson's Bay Company has been responsible for among any of the northern Indians in a hundred years.' In essence the major change was that the diligence of the whalemen in northern waters reduced the supply of whales to Thule harpooners and thus hastened the transition from Thule to Modern Inuit (Taylor 1968:16). Though very little is known of this transition, the activities of the whalemen contributed to the cultural transformation of the Inuit from the archaeological Thule people to the historic inhabitants of recent times.

Exotic new foodstuffs were among the many changes that the whalemen introduced. Ferguson (1938:5) includes beef, pork, beans, rice, dried apples, vinegar, molasses, flour and hard-tack in a list of provisions aboard the whalers. Ross (1967:202) repeats such staples as beef, pork, flour, beans and molasses as being carried in the Hudson Bay whalers, but adds that sometimes potatoes and onions, dried fruit and vegetables were on board the ships and occasionally fresh meat on the hoof, like the two pigs on board the Black Eagle. The whalemen gave out many of these foods to the Inuit in return for work. Tremblay (1921: 30) records that in northern Baffin Island whalemen issued supplies of biscuits, tobacco, molasses and tea to the Inuit so that they would remain in the area during the winter to be on hand for whaling operations in the following year. In southern Baffin Island Hall (1865:137) notes that in 1860 the whaler George Henry 'was feeding and employing in the whaling service thirteen Esquimaux -- that is,

two boats' crews and two over. They got three meals a day in the cabin. The ration to each was one sea-biscuit, a mug of coffee and a slice of salt junk. Besides this they were furnished with all the pipes, tobacco, clothing, guns and ammunition they wanted.' Boas (1888:59) gives the payment to an Inuk for a half year's work at the Kekerten whaling station in Cumberland Sound as a gun, a harmonium or something of that nature and a ration of provisions for their families with tobacco every week. Every Saturday the women came to the station house at the blowing of a horn to receive their bread, coffee, syrup and precious tobacco. In return the Inuit were expected to deliver in the station kitchen a piece of every seal they caught. As late as 1903 Low (1906:10) found the Inuit of southeastern Baffin Island fully employed at the whaling stations each of which had from four to six boats. During the whaling season nearly every able-bodied man was working and he and his family were fed with biscuit, coffee and molasses from the station but supplied their own animal food. The men were paid irregularly for their work, usually in tobacco, ammunition and clothing.

Much the same arrangements pertained in the Western Arctic. Foote and Williamson (1966:1048) note that competition for baleen between rival American whaling captains led to a growing demand for Inuit labour and to the influx of more and more desirable trade goods as a means of attracting it. These included tea and flour as well as repeating rifles, canvas tents, tobacco and other goods. Stefansson (1913:46) claims

that at first the Inuit would have nothing to do with any of the exotic provisions with which the whalers were laden;

> but in the course of a few years they learned the use of flour, molasses, sugar, etc., which became first luxuries and then necessities. It was important for the whaling ships to get plenty of fresh caribou meat to keep their crews from getting scurvy, and they employed practically the whole population in the pursuit of caribou, fish and ptarmigan. Such things as flour, hard bread, sugar, canned meats and vegetables, butter, etc., they gave with a free hand to the Eskimo, urging them to use them and to save meat.

Salt was another dietary item that the Inuit obtained from the whalemen (Stefansson 1936:8), but at first they did not like it. In fact among 'the uncivilized Eskimo the dislike of salt...[was] so strong' that a saltiness imperceptible to Stefansson (1913:75) 'would prevent them eating at all.' Schaefer (1959:387) agrees that the Inuit 'have a natural aversion against all salty food.' Davies and Hanson (1965:208), reviewing the literature on the subject of salt in the Inuit diet, report contradictory statements from a number of sources, one saying that small amounts of salt were taken with food, one that a 1:3 proportion of salt water was used in cooking, one that salt was entirely obtained from the meat eaten. One source quoted by Davies and Hanson agrees that coastal Inuit did add sea water when boiling meat, but that at least one group of 140 Inuit at Bathurst Inlet as far back as 1923 'purchased three dozen 2-lb packets of salt annually for cooking purposes, and the purchases of salt can

be ascertained from the Hudson's Bay expenditure accounts at local northern stores.' It may be that the Inuit needed time to develop a taste for salt as they did for most white food. Stefansson (1936:7-8) tells how Roxy, an English-speaking Inuk, 'had heard that white people believe that salt is good for, and even necessary for children, so they begin early to add salt to the child's food.' Thus the children would grow up with a taste for salt and it would become an indispensable part of their diet.

It was not necessary to work for the whalemen to receive the new foodstuffs that they had to offer. Trading developed between Inuit and whalemen, the Inuit supplying the whalemen with fresh meat, furs and skins and receiving in return such things as hardtack and molasses as well as guns, ammunition, tobacco and trinkets (Ferguson 1938:84). Boas (1888:59) lists coffee among items given to Cumberland Sound Inuit in return for seals and walrus blubber and he describes how sledges were sent out from the ships to one Inuit camp after another to exchange tobacco, matches, coffee, bread and such like for skins and spare blubber which the Inuit had carefully stored. And sometimes destitute Inuit were given food from the whaler's supplies. Ferguson (1938:115) recalls how a group of natives 'came around the ship... looking for something to eat. They were hungry. Capt. Fisher gave orders to break out a cask of hardtack and another of molasses to give them a good feed.'

By the end of the first decade of the twentieth century

most of the Inuit in the Canadian Arctic had been exposed to the white man's food directly or indirectly as a result of whaling activities. Even a group as remote as the Copper Eskimos had been contacted in 1905 and 1907 from the whaling stations of Herschel and Baillie Islands and introduced to non-Inuit foods(13). Diamond Jenness found that the 'natives take kindly to white men's food but only as a luxury' (Ibid). Stefansson (1913:46) used the same term with respect to the Inuit of the Mackenzie delta coasts: they regarded flour, molasses and sugar as 'luxuries', but only at first. Later the luxuries became necessities. Burwash (1927:46) considered this an Inuit characteristic. Writing of the people of the eastern Hudson Bay area he said: 'While they have not yet become too greatly attached to white man's food they no doubt have the Eskimo tendency to become more and more dependent on it.' Stefansson (1936:4) estimated that in the Western Arctic perhaps one in ten of the Inuit developed a fondness for white man's food. Tea 'was the only element of the white man's dietary of which they were really fond.' Ferguson (1938:93) found that the Inuit were also 'very fond of anything sweet' and used to eat lots of molasses candy. Flour, molasses, sugar, tea, candy: there is no doubt that the seeds of later nutritional problems among the Inuit were sown by the whalemen before the beginning of the twentieth century.

2.4 Trapping and trading

The decline of whaling and the departure of the whalemen created an ecological vacuum in the Canadian Arctic. Traders, both individual and corporate, moved in to fill it. Many of the traders were old-time whalemen who had already established trading contacts with the Inuit. Some remained as independent entrepreneurs; others went to work for the Hudson's Bay and other companies as post managers (Baird and Robinson 1945: 145). Some of the old whaling stations, like Kekerten and Blacklead Island in Cumberland Sound, became trading posts under the new commercial regime. Outgrowths of the whaling depots were operated by the American Trading Company at Wager Bay and Repulse Bay at the turn of the century, and others were working out of Pond Inlet and Fullerton Harbour by 1903 (Bisset 1968:35). In the Western Arctic, trading posts were established in the Mackenzie delta at Fort McPherson in 1840 (Davies and Hanson 1965:205). The Hudson's Bay Company opened its first post in purely Inuit territory at Wolstenholme, Quebec, in 1909 and by 1940 were well established in the whole Eastern and Western Arctic, including Labrador(14). Jenness (1964:97) comments on the cultural impact of the traders:

> The fur trade which the white man had introduced during the latter half of the nineteenth century had weakened the intense community life... [the Inuit] had inherited from their ancestors by preventing the traditional reunion of families each autumn on the sea ice, or on the adjoining coast,

> where the hunters could co-operate in tracking down the seals at the animals' breathing holes to supply both the daily food of the community, and the blubber it needed to cook that food and to light up its homes. Thereafter, the hunters deserted the sealing grounds to seek fox furs during the four or five months of winter when the pelts were in their prime: they scattered with their families to individual trapping-places, each a day's journey from its neighbour, because the white fox, the commonest fur-bearer in the Arctic, is a solitary animal that wanders far and wide.

Jenness perhaps overstates his case. The Inuit never fully abandoned hunting in favour of trapping. They did not become trappers instead of hunters but, for the most part, hunters who trapped. A few communities, particularly in the Western Arctic, and certain individuals in communities elsewhere did trap extensively. Nevertheless, throughout the Eastern Arctic as late as 1951 'the number of traps set by the average Eskimo during a winter does not exceed twenty or thirty'(15). These were not usually set inland but along the shore or on the ice where the Inuit could inspect them on their way to and from their seal hunting. The trapping season extended from 1 November to 31 March, the five months during which seal hunting was at its lowest ebb. 'Still following their primitive custom, the Eskimos lay up caches of meat during the late summer and early fall whenever possible, and depend largely on these reserves during the winter months. If sufficient cannot be put aside in the fall then hunting is the first consideration and trapping is incidental only' (Ibid).

The adoption of trapping as a new form of livelihood, either full-time or as a supplement to hunting, introduced exotic economic arrangements into the arctic cultural system and accorded them an increasingly important role in the ecological process of acquiring and consuming energy. Trapping, as Jenness noted, demanded a more widely scattered population and thus broke down the centralizing effect of the whaling stations. In many cases this meant establishing traplines in areas that were good for white foxes but not for food animals. As a result many Inuit groups had to be grub-staked by the traders or trading companies for whom they worked. RCMP patrol reports are full of references to this situation. For example, in 1934 a patrol from Pond Inlet found a group of four families and one old man at the south-western end of Bylot Island all short of seal meat for themselves and their dogs and fat for their lamps. But the Inuit refused to move to Button Point, where seals were plentiful, because fox were numerous where they were(16). In 1935 Pritzler Harbour in southeastern Baffin Island was described by the RCMP as a poor camp for seals and not so good for walrus either. But it was good country for foxes, and the people there 'depend largely on supplies which they purchase from the Hudson's Bay Company. Their greatest difficulty is in securing sufficient dogfood and fat for fuel'(17). The situation and its consequences were well known to government officials in Ottawa. The Chief of the Northern Administration Division wrote in 1949(14),

> There are spots in the Arctic which are rich in sea-food supplies for Eskimos but where white fox are scarce. A few instances are Port Burwell, Wakeham Bay and Amadjuak, where there were large Eskimo settlements when the fur trade opened up. These people were able to get their food, fuel and clothing from the sea mammals but had few foxes to trade at the Hudson's Bay Company posts first opened there. These posts were closed and new ones opened in good fox country where there was a dearth of sea food.
>
> The Eskimos followed the traders and now subsist largely on food bought from the store in return for white fox.

This corporate despotism extended to some of the individual post managers and traders. At Mingook camp in the Frobisher Bay area, according to a 1927 RCMP patrol report, 'One native wanted to give a written statement saying the place was no good for hunting, and that they wanted to go North of Singijah to Robinson Sound, where there is good hunting but were afraid the White Men would not like it. All the Natives of this Camp Complain of hard times'(18). The same patrol reported of the Inuit in the Markham Bay area that it 'appears that the Hunters in this locality are forced, by the Manager of the Trading Company at Amadjuak to spend most of their time hunting Foxes. Therefore are unable to get sufficient Meats and Fats for them selves.'

The result of the adoption of the trapping ecology was greater dependence on the traders' stores for many of the basic necessities of the new way of life. Not only rifles and ammunition, which the white men alone could supply, but foodstuffs and clothing which the once self-sufficient people

had provided for themselves. The new practice was to purchase these goods with credits obtained from the sale of furs to the trader. The time saved from having to hunt for one's food was devoted to the trapping of foxes. Gradually, as Burwash, Stefansson, Jenness and many others have noted, the foods of the white men ceased to be regarded as luxuries and became necessities. Dr L. D. Livingstone commented in 1927[19]:

> White man's foods, such as flour, tea, sugar and molasses, although becoming a necessity to the Eskimo, are really a luxury to these people as the essential food is meat. A native may travel long distances with the sole intention of getting some flour or biscuit and tell you he is hungry... He is hungry for the white man's food only, for he has probably passed up plenty of seal meat.

The situation that Burwash[20] found in the eastern Hudson Bay area was not unusual:

> All the natives in these areas have been in close contact with traders for some generations and have, as years went by, not only become more and more dependent upon the imported supplies of both food and clothing, but have reached a stage in their progress to civilization where the old time Eskimo diet is, to say the least, not entirely all sufficient.

The Commissioner of the Northwest Territories made the same point: 'When trapping in the interior the Eskimo is of necessity deprived of his natural food obtained from the sea and is dependent on white man's food or on caribou, either or both of which is an inadequate diet'[21]. In his report

to the Northwest Territories and Yukon Branch Burwash (1927: 45) complained that the Inuit 'draw far too heavily on the store rations which are as in other areas very poorly balanced.'

But there was little that could be done to balance them. The Deputy Commissioner of the Northwest Territories wrote to the Deputy Minister of National Health and Welfare in 1947(22),

> You will understand that any food used by the Eskimo must be relatively inexpensive, easily prepared with a minimum of expenditure of fuel, must not be subject to damage by freezing and must, as far as possible be compact and portable on sleds in winter and by boat in summer. A long list of articles to comprise a balanced diet would not be practical for Eskimos owing to their manner of life. Flour, of course, is very convenient from this point of view.

Given these limitations flour was the only obvious staple available from the stores that could replace reduced supplies of meat. In addition there were baking powder, sugar, tea, jams. These foods unfortunately added little besides calories to the Inuit diet, but the natives' use of them was growing. 'Each year their demands for imported foods increase but it is doubtful if this is due to any decrease in the local supply of native foods' (Burwash 1927:45). In the late 1920s the Inuit of St Lawrence Island not only lived on a staple diet of traditional country food like walrus meat, blubber, fish, berries, seaweed and willow roots, but were obtaining more supplies of tea, flour, and sugar through barter (Cremeans 1930). 'Flour, biscuits and tea are in demand,' the RCMP

reported from southern Baffin Island in 1931, as more and more the traditional diet was replaced or at best supplemented by the new foods of the white man[23]. 'Chief amongst the manufactured products,' wrote an RCMP officer from the Western Arctic, were 'flour, tea, rice, oatmeal, syrup and sugar'[8]. In 1934 the Cumberland Sound Inuit were said to have developed a 'dependence on flour' and were already suffering from 'harm done by allowing Tea, Flour and Biscuits to largely replace seal'[24]. Elsewhere in the Eastern Arctic 'supplies of flour, baking powder and tea' were described as 'essential' in 1949[25].

Depending on the time of contact with the traders and their stores the Canadian Inuit had varying periods in which to develop dependence on imported foodstuffs. Among the earliest were the Inuit of northern Quebec. A list of goods sold to both the Inuit and the Indians of this region is available in the Canadian Senate report of 1887 on the natural food products of the Northwest Territories, which then included the prairie provinces. The food items on this list included deer tongues, venison, biscuits, flour, oatmeal, pork, tea, sugar and molasses. The units of currency were prime or 'made' beaver. The most expensive food items were molasses and tea at four made beavers a pound. Biscuits and flour cost one sixth of a made beaver per pound.

Traders' stores reached their maximum distribution in the Canadian Arctic in the 1930s and price lists of goods on sale are available from that period. On one list for 1931-32[26] bacon, butter, lard, sugar, jam, tea, coffee, baking

powder and Crisco appear as the only food items, but this must be only a partial list because things as important as flour and molasses are omitted. Both appear on a 1934 price list, flour, like sugar, being then distinguished into white and brown varieties(27). Also added on the 1934 list were condensed milk, evaporated milk, rice and rolled oats; but coffee was omitted. The omission of coffee may be due to incompleteness of the list or to the fact that tea had become the universally popular drink of the Inuit, the one commodity from 'the white man's dietary' that Stefansson (1936:4) noted as being particularly favoured by the natives. The fondness for tea goes back to the whaling days in both the Western Arctic, as Stefansson remarks, and in the Eastern Arctic. The Inuit of the Eastern Arctic, as the Deputy Commissioner of the Northwest Territories wrote in 1944, 'adhere to the belief originated by the whalers and the early explorers that pilot biscuits and tea, well sweetened with molasses, are the best food the white man can supply'(28). In 1934 the Medical Officer at Pangnirtung described the Inuit as living in a 'state of Tea and Biscuit servitude' and wondered if it ever would be possible to lure them out of their 'Tea and Biscuit bliss'(24). 'Tea is not necessary but has its value,' he wrote, 'similarly Biscuits.' But the danger existed, as with flour, 'of allowing these articles to become too important in their diets.' In 1943 a nutritional survey in the Canadian North found that the Inuit 'now consider tea as a staple of their diet and this is drunk and eaten (the leaves!) by even the small children'(29).

'The so-called pilot biscuit and the cup of tea play an important part in friendly contacts between traders and Eskimos,' the Deputy Commissioner of the Northwest Territories wrote(30). Today tea drinking is still an important part of visiting in the Arctic, having acquired something of the aura of a ritual, and the Inuit still drink it in extraordinary quatities. One government-employed researcher in 1963 estimated that tea consumption among some groups of Inuit was as much as twenty cups per person per day(31).

In Cumberland Sound in 1938 the store-bought foods available were limited to flour, hardtack, biscuits, tea, sugar, molasses, baking powder and some jams or butter if they could be spared from the regular mess of the trading concern(32). The last two items, however, were too small in amount to be considered as regular purchases. These foods were extra to the normal diet of the Inuit, but the Medical Officer at Pangnirtung commented that 'Unfortunately a great many have acquired a taste for white mans [sic] food and prefer it, sometimes almost to the exclusion of their natural foods. Over a period of years this gradual change is either to have a good or a bad effect upon their general health' (Ibid),

A complete list of foods supplied to the Inuit from the trading post stores in the Coppermine area is available for 1943, together with the estimated average annual purchases for a household(33),

Food item	Pounds
Tea	50 or more
Coffee	20 or more
Sugar	100 or more
Rice	10-15
Lard	35
Sweet biscuits	20
Rolled oats	40
Flour	400
Baking powder	10-12
Dried onions	2
Salt	2
Dried beans	10-15
Cocoa	5
Corn meal	30-40
Condensed milk	20
Dried apples	10
Jam	10
Pilot bread	50-75
Butter	10
Bully	10

In addition to those items listed above the Inuit also used powdered milk, canned fruits, prunes, peaneu butter, canned eggs, fresh oranges, canned tomatoes. The presence of fresh citrus fruit was a recent improvement. In 1939, only four years before, a preliminary investigation by a team of nutritionists led by Dr F. F. Tisdall disclosed that 'the foods consumed at northern posts usually contained few citrus fruits or juices, insufficient milk and too high a proportion of carbohydrate foods' (Robertson et al. 1953:740). This was partly due to the fact that at that time citrus juices were not stocked at the posts. Obtaining fresh supplies of meats, fruits and vegetables by air was not possible, and the local supply of game and fish at different posts varied greatly. The 1939 study was carried out with the white residents of the arctic posts in mind, rather than the Inuit. Doctors

had recognized that many trading post managers and their families, who fed themselves from the stock on their trading post shelves, often suffered from diseases. One result of this investigation was that Dr Tisdall 'found it necessary to prepare a special vitamin tablet for Hudson's Bay Company personnel stationed in the north'(34). An irate Major D. L. McKeand of the Bureau of Northwest Territories and Yukon Affairs commented that 'if Dr. Tisdall found deficiencies in northern foods and prescribed a remedy, it seems reasonable for a layman to suggest that the Eskimos should have been protected against these deficiencies years ago' (Ibid).

The general opinion at the time, however, was that as long as the Inuit maintained their traditional diet they were in no risk of nutritional deficiency diseases. For example, Winifred Hinton of Nutrition Services of the Department of Pensions and National Health, after a long study of northern food habits and diet in 1943 reported the concensus of contemporary opinion when she wrote(29),

> The true native diets of both Eskimos and Indians seem to supply all the known essentials for the body and this is borne out by the findings among isolated groups and the older natives who still cling to former habits. Their health and bodily structure is [sic] reported as excellent. The new generation suffers from all the ills that beset white men: dental caries, tuberculosis, arthritis, all the deficiency diseases, etc.

Rodahl (1950:60), writing seven years later, explains the change in terms of a switch from fat to carbohydrate:

> Climatic conditions in the Arctic Regions have made it necessary for the Eskimo to have a much higher fat consumption than the white man in more temperate zones. Necessity developed in him a liking for seal blubber that is now hereditary. Through generations he developed the ability to assimilate large amounts of fat. It is clear that the Eskimo is so specialized and adapted to his own way of living in his peculiar environment that any change would mean the destruction of his race, and this, in my opinion, is what is happening to the Eskimo today. The white man has given him the rifle -- the harpoon is more or less forgotten -- and sugar, bread, alcohol, and even butter form part of his daily diet. His diet is becoming increasingly of a carbohydrate nature, with the result that the Eskimo is becoming unsuited for the arctic conditions under which he lives. Epidemics of tuberculosis and influenza are frequent and dental caries which formerly occurred only in isolated cases is now common.

It may be that Rodahl overestimates the amount of fat in the Inuit diet. Christine Heller in Alaska and Otto Schaefer in the Canadian Arctic collected data on Inuit diets for the whole year and for large areas of territory, and these researches, unlike the limited and seasonal observations of more casual enquirers, show that the Inuit consumed much less fat than is commonly assumed and claimed by people like Rodahl and Stefansson (O. Schaefer: pers. comm.). In fact, according to the Alaskan Health and Nutrition Survey Inuit consumed only approximately half of the fat of other Americans, and Dr Schaefer found that Canadian Inuit in the mid-1960s consumed even less fat than the Alaskan. Nevertheless, the change from the traditional diet dominated by the flesh of sea mammals to one containing large quantities of carbohydrate

was harmful to the health of the Inuit. This was recognized as early as 1928. In June of that year the Director of the Northwest Territories and Yukon Branch wrote: 'Our officers find that at areas where the Eskimos are still living almost exclusively on their natural diet of sea mammals and fish, they are physically very much superior to the natives in the areas where such rations as I have referred to [i.e. store-bought foods] are being issued'(35). In February 1936 the Medical Officer at Pangnirtung reported that stomatitis and conjunctivitis had appeared among the children there(24). 'These conditions I judge to be due to lack of fresh food,' he wrote, 'and are not found in outside camps were [sic] the natives including the children live on seal and having no reserve, they get fresh seal or nothing.'

But the Inuit were turning to store-bought foods to provide more and more of their diet. Partly this was due to the fact that traditional food animals were declining in numbers in the trading post areas. A warning to this effect had been issued by the RCMP in 1930(36):

> New Trading Posts are being opened and the Natives are divided, some families being sent to the new Post. Those natives are encouraged to trap instead of hunt so as to increase the returns of the new post or outpost. The establishing of the new Post drives the game further afield and makes it more difficult for the native to obtain his natural food.
>
> As the game becomes more scarce the Natives are compelled to depend more and more on the food supply which the Trader has for sale.

One reason for the growing scarcity of food animals was trading company practices. In 1925 the Advisory Board on Wild Life Protection was 'credibly informed that some of the natives of Baffin Island who, up to the present time, have killed sufficient caribou for clothing alone, are now encouraged to kill them for the purpose of selling the hides to the trading posts'(37). The Board was further informed that these caribou skins were shipped by the Hudson's Bay Company boat to the coast of Labrador 'where such hides are in great demand.' On occasions the trading company practices led to inexcusable waste, as when 'large quantities of the meat of the so-called "white whales" or beluga' were lost as a result of whaling operations carried out by the Inuit under the direction of officers of the Hudson's Bay Company. In one instance 800 beluga were slaughtered and in another 400. And 'nearly all the meat was allowed to drift away with the tide, the natives in the employ of the Hudson's Bay Company only saving the hides and blubber' (Ibid). The Advisory Board on Wild Life Protection contended that 'had this meat been saved, it would not only have provided food for the natives and their dogs, but would also have avoided the necessity of killing a great number of caribou and other forms of wild life.'

In 1943 the manager of the Hudson's Bay Company post at Wolstenholme, Quebec, noted that the Inuit 'enjoy better health when living on native foods but these are becoming more difficult to secure each season'(38). Dr G. C. B. Gaulton, the Medical Officer at Pangnirtung, told a meeting in Ottawa

in 1946 'that the native food supply (seals) has undoubtedly decreased in recent years in some sections and the natives who live in such parts to trap foxes are often short of native food'[39]. By the beginning of 1947 Northern Administration was alerted to what was happening as more and more reports from the Arctic, including government-sponsored wildlife surveys, repeated the same message. The natural food resources of the Inuit were declining. The number of caribou, for example, had dropped alarmingly from around 600,000 to around 175,000 in the five years from the end of the war to 1950 (Stevenson 1969:7). In an attempt to allow animal numbers to build up again the government enforced quotas on certain animals and imposed close seasons and outright bans on killing in especially hard-hit areas. In January 1947 the Deputy Commissioner of the Northwest Territories wrote to the Deputy Minister of National Health and Welfare[22]:

> As you are aware, the Eskimo native food supplies such as caribou, seal, walrus, white whale, etc., have become scarce in some areas and the natives are forced to depend in considerable measure upon white man's food purchased from the traders in return for white fox and other furs. Medical reports over the years show that the healthiest Eskimo are those who have plentiful supplies of country produce. As the proportion of white man's food increases in the diet, the native health is found to decline...
>
> It seems to us until the supply of food animals can be increased which, in any event, will take some years, it is highly important that the traders be required to stock some simple and economical foods that will provide a more balanced diet than flour alone.

Thirty years later the Food Talk Project in Frobisher Bay made the same plea in almost the same words, asking that 'the stores must take a position of responsibility in stocking foods which are healthy and inexpensive'(40). But the main aim of traders and store managers is to sell goods to make a profit and this is the same in 1977 as it was in 1947 or 1927. In 1927 Burwash (1927:46) wrote of the Inuit and their diet: 'As the ration at present available is the customary tea, white flour and tallow, should their appetite for it increase, and be pampered by the trader, they will eventually be brought into the same category as their brothers on the mainland' (emphasis added). Burwash believed that the greatest assistance that could then be given to the Inuit 'would be the proper organization of their fisheries, instruction in the conservation of their product and the use of a little scientific knowledge in the selecting of the imported foods supplied them.' This sentiment was also repeated, and again in almost the same words, by the Frobisher Bay Food Talk Project exactly half a century later.

The main aim of the trading post being to make money through the sale of goods, the competition among traders to attract custom was very strong. Corporal Willan of the RCMP at Coppermine made this point in his submission to the 1943 food survey(33). He believed that more money might be invested in foods of high nutritional value if control was exercised not on food purchases themselves but on the sale of non-essentials like jewelry, watches, flashlights, silk neckerchiefs,

fancy silks and brocades, gold chains, perfumes, fancy soaps, even 'a silver tea service that was sold to a family at Banks land.' In the Eastern Arctic the same situation pertained. A Medical Officer reported in 1955(41),

> I have been amazed at the variety of utensils, clothing, tins, bottles, and gimcracks to be found in their tents, extra to the obviously necessary items such as the stove, the cooking pots, the rifles, the meat lying in a heap in a corner, and the bed boards. It would seem that the Eskimo buys items (presumably from the Hudson's Bay Company) which he could well do without, putting his credit into better food, for instance. One tent had two perfectly good alarm clocks ticking side by side and set within a minute of each other... One tent had two sewing machines, both in working order.

'Traders will not refrain from selling these articles as there is a demand created by the traders themselves putting these items on the counters,' wrote Corporal Willan of Coppermine. 'If one refrains from selling them, the opposition at any point reaps all the profits'(33).

This situation was worse in the Western than in the Eastern Arctic because the number of competing traders was much higher in the western region. In the Eastern Arctic by the 1930s the Hudson's Bay Company had a virtual monopoly of trade, its only serious competitor still in operation being the Baffin Trading Company of Cape Dorset. The Western Arctic has a longer and more continuous history of white contact with native people, largely on account of accessibility along the Mackenzie, and one fact stressed over and over again since

the early years of the century is that those Inuit closest to white society were the most debased culturally, physically and even mentally and morally. Dr L. D. Livingstone drew a distinction between the inhabitants of the Western and Eastern Arctic in 1938(42). Those Inuit who became trappers and settled along the Canadian coast about the Mackenzie delta had inherited a percentage of white blood and changed their mode of living 'from that of the aboriginal Eskimo to that of a poor white culture.' They developed among other ailments very inferior teeth caused by syphilis, by an influx of white blood and also by 'the use of imported foods.' In this transition, Livingstone wrote, 'these people have changed their diet but have made no advance in the selection or the preparation of imported foods.' Thirty years later that complaint was still being heard.

In marked contrast to the Inuit of the Western Arctic were 'those natives eastward, who, from Coronation Gulf all the way to Baffin Island, are living to a large extent on natives' diet and have not the amount of white blood in their mixture.' Winifred Hinton noted that 'since the Eskimos of the Eastern Arctic are forced by circumstances to be more self-reliant, and to eat more native food, it should be possible to keep them in reasonably good condition by discouraging exclusive use of Post foods'(29). But as the Eastern Arctic became more and more accessible, and as the number of trading posts and white personnel there increased, especially during the Second World War, observers reported a

growing consumption of store-bought foods and a rising incidence of ill-health related to declining nutritional standards. 'The native is himself largely to blame,' commented Dr J. A. Bildfell, the Medical Officer at Pangnirtung in 1941, through 'dissipating his buying power on such non essentials and strictly superfluous commodities as print, tea, white flour, luxuries, biscuits, etc.'(43). It is interesting that the doctor in this instance blames the native, while the policeman elsewhere(33) blames the trader.

Part of the reason for the declining nutritional standards was that many of the foods necessary for health were 'scarce or expensive at trading posts, and other foods... unfamiliar'(44). General deterioration of health was therefore common among Inuit and also among Indians and white men who became tied to trading post customs and foods, rather than eating off the land. Health deterioration was partly due to the kinds of trading post foods consumed by the Inuit. Chief among these were white flour, tea, sugar and biscuits(38) (43). 'There is little doubt but that the present native diet is not all it should be,' wrote L. T. Burwash as early as 1927, 'as white flour and tea will eventually reflect in the stamina of the people.' Twenty years later J. G. Wright of the Bureau of Northwest Territories and Yukon Affairs reported that 'there has been a steady increase in recent years in the demand by the natives for flour which they are eating by preference rather than from necessity'(45). As much as one pound of flour per day was often by an Inuk in the North(44). The

Deputy Commissioner of the Northwest Territories described flour as 'the main staple'[22]. In recent years, he added, the flour sold to the Inuit was 'the high extraction variety ... supposed to retain a larger measure of vitamins and essential minerals than the former highly processed variety.' Nevertheless it did not appear to him that 'an almost exclusive flour diet of this sort' could sustain health. However processed or fortified, it was still white flour. Dr F. G. Banting of the University of Toronto recognized the problem as the Inuit tendency to eat one food continuously while it was available. In a letter to the Director of the Northwest Territories and Yukon Branch in 1927 he wrote[46]:

> There is little variety in the Eskimo diet. If he eats seal he eats it exclusively for days or weeks at a time. It is therefore more necessary that whatever foodstuff he eats should contain all the essentials. As before mentioned, the trader gives the Eskimo white flour or sea biscuits made from white flour, and the Eskimo makes these his only article of food as long as it [sic] lasts. But the white flour does not contain all the food essentials. Animals fed on white flour and water die. White flour is deficient in protein and salts, and absolutely lacking in vitamins. This makes it an especially harmful diet for the young children because it does not provide them with the elements essential to growth. The lack of fat soluble vitamins is particularly disastrous since the Eskimo is without sunshine for three months in the winter, and even when the sun does shine there is but a small part of the body exposed.
>
> From these facts it will be evident that white flour is not only useless but harmful to the Eskimo since it provides him with what

> he thinks to be a food, and at the same time makes it unnecessary for him to obtain native food which is essential to life in the Arctic.

Earlier attempts to provide the Inuit with whole wheat flour were not successful 'because of native dislike of the taste'(47). Flour was usually cooked in the form of a bannock fried in seal oil or other grease, and 'it seems the whole wheat element, at least in full strength flour, burns on frying and so taste is affected' (Ibid).

Bannock is a word of Gaelic origin used to refer to flat round home-made bread, usually unleavened and cooked on a griddle. With the introduction of baking powder bannock 'began to come into its own as a staple in the North,' and making bannock became 'an essential craft which, like syllabic writing, is now taught early to the children' (Macfie 1956:23). While the composition of bannock varies, the chief ingredients are flour, water, baking powder and salt with whatever lard or oil is available. 'When it becomes the sole article of diet, as it often does for Eskimos around trading posts, nutritional deficiencies develop'(44). That this sometimes happened was attested to by reports from Roman Catholic priests at Tuktoyaktuk who claimed that the Inuit 'spend their winter in a state of destitution, living mainly on a diet of bannock and tea'(48). Alma Houston, the government representative at Fort Chimo in 1954, reported of the Inuit there that 'The bulk of their daily food intake is made

up of flour, lard and baking powder in the form of pan bread or BANNOCK'[49]. Kemp (1971:113) notes that in southern Baffin Island bannock 'is eaten in the largest quantities where hunting has fallen off the most.'

The Nutrition Division of the Department of National Health and Welfare advocated the production of a bannock mix fortified with skim milk powder[44]. They argued that the change-over in the North from a high protein diet of meat and fish to a high carbohydrate diet of bannock would give deficiencies of biologically valuable protein and of minerals and vitamins, especially calcium and riboflavin. Milk provided all three nutrients and it could be mixed in powder form with the 'traditional post foods which were tea, sugar, flour, lard and baking powder... Adding skim milk powder to bannock mix would not increase the caloric content but add 21 per cent more protein, 587 per cent more riboflavin and 766 per cent more calcium per pound' (Ibid). But the Hudson's Bay Company refused to stock bannock mix generally in their stores unless there was some type of subsidy to reduce the price[50].

Another staple of the new Inuit diet, the pilot biscuit, also came under the scrutiny of government dieticians in the late 1920s. A special 'Eskimo biscuit' was produced using whole wheat flour, molasses, crushed linseed, fats, soda, bran, boiled meat and salt[30]. These biscuits contained 16.25 per cent protein and 64.76 per cent carbohydrates, plus fat, fibre and mineral matter. Reports from the Eastern

Arctic Patrol and from individuals like J. Dewey Soper(51) and L. D. Livingstone(52) praised the biscuit in superlative terms and indicated that it was particularly relished by the Inuit. 'However, for reasons of economy the purchase of the biscuit was discontinued in 1931'(53).

The danger in supplying biscuits to the Inuit was to create a demand for them, as by endorsement. When the 'Eskimo biscuits' were no longer produced after 1931 they had to be replaced by an inferior product. The Deputy Commissioner of the Northwest Territories wrote to the chief nutritionist of the Canadian Medical Association: 'Our own view is that native food should be used wherever this is possible but from your own northern experience you will appreciate the fact that the natives expect the issue of biscuits'(30). So because biscuits were acceptable to the Inuit, having a history among them extending to the whaling days, medical opinion was that they should be fortified. Dr L. H. Newman, Dominion Cerealist at the Experimental Farm in Ottawa, worked out a new recipe by which he produced a type of biscuit using such ingredients as soybean flour, skim milk powder, carrots, oatmeal and debittered brewers' yeast(53). These biscuits, together with milk and tea, were provided as a noon meal to children in 125 out of approximately 300 schools in the Northwest Territories under the direction or supervision of the Indian Affairs Branch (Ibid). The government's chief nutritionist, Dr L. B. Pett, considered that in a general way any step of this nature was a good thing if it provided sufficient nutrition to overcome deficiencies met elsewhere(54). The benefits were

increased if the children learned something about what foods to eat so that they could pass on this knowledge to their contacts even after leaving school. But there was a danger in this particular case.

> No matter how nutritious a biscuit is prepared the giving of a biscuit and tea seems to me to be admitting that nutritional improvement of the diet must be made without the introduction of any unfamiliar foods. Normally we consider that children are particularly susceptible to learning about other foods and that they have a considerable influence on their families. On the other hand, I am reaching the conclusion in connection with our studies for you that improvement in dietary status can be achieved chiefly by emphasis on a return to native foods.

Hence to serve biscuits to children, especially with the backing of the school-teacher's authority, was to perpetuate and reinforce the old belief in biscuits and tea as an adequate diet. The Administration thus found itself in a dilemma. Without doubt the new biscuit was 'much more nutritious than ordinary piloy biscuit providing as it does in one biscuit weighing 2 oz approximately 160 calories, about 2400 units of vitamin A, 72 units of vitamin B1 and 0.19 mgms of vitamin B2 or riboflavin' (Ibid). But to serve these was to advocate biscuits as part of good nutrition and, as Dr Pett pointed out, there was, in fact, no information on their actual value in maintaining health. They did not provide sufficient calories or vitamins to have any curative effect on any degree of malnutrition that might exist. Neither had they sufficient calories and vitamins to take the place of

other desirable foods. Their main advantage was that they represented the best offorts then avaïlable to incorporate nutritious foods in a form familiar to the Inuit. Because of this they were supplied to RCMP detachments and church mission stations for issue as relief rations and as the main item in the noon lunches of many schools.

2.5 Wage employment

Hunting and trapping were not the only means whereby the Inuit earned their livelihood after the coming of the Europeans and the North Americans to the Arctic. The whalemen brought in missionaries; the traders brought in the RCMP; and both the missionaries and the police hired native labour, as did the trading companies themselves, as interpreters, caretakers, storemen, servants, and as participants in tasks for which the Inuit had particular aptitudes such as dressing skins for the Hudson's Bay Company or helping in their annual whale drive. Actually the whale drive provided little more than enjoyment for the Inuit. But the annual supply ships to the arctic settlements, operated by the Hudson's Bay Company and by the federal Northern Administration, employed numerous Inuit at 'ship-time' throughout the summer patrol season as stevedores unloading supplies from the ships. During the Second World War the United States and the Canadian armed forces set up military establishments in the Arctic and provided more and more jobs for Inuit in various capacities, most of them of a menial kind because of the low educational

level of most of the native people. Almost all of these jobs were seasonal or temporary. The employed Inuit still continued to hunt and trap, but many received issues of food while they were on the job, much as they had done under the whaling ecology. For many Inuit the food they received from their non-Inuit employers was an introduction to the white man's way of eating. If this was the white man's diet it had to be good. Unfortunately the non-Inuit were even more dependent on the trading post stores than were the Inuit themselves and they suffered the same diseases of poor nutrition. The calamity for the Inuit was their tendency to copy the white man's ways, a tendency noted by many observers in relation to more aspects of white culture than diet alone. But diet they certainly copied, and this led to such physical characteristics as the 'low haemoglobin, the nasal obtrusion and the tendency to snow blindness' that Dr N. R. Rawson found at Chesterfield and which he ascribed to 'nutritional defects'(55). 'It is difficult to see how these defects could be remedied,' wrote Dr Rawson, 'but perhaps a revision of the rations issued to the native employees and to those on relief might help. Such a revision would affect not only the recipient of the ration but also others prone to follow the example of the whites in the chose [sic] of food.' Dr Rawson added that with respect to snow blindness and its prevention by riboflavin the Inuit ate large quantities of meat 'but little milk or cheese or green vegetables.'

A list of weekly rations issued by the RCMP to its Inuit

employees at Chesterfield consisted of the following[56]:

Salt pork	2 lbs.
Flour	14 "
Pilot biscuits	7 "
Rolled oats or beans	3 "
Lard	1 "
Tea	½ "
Baking powder	½ "
Molasses	½ gall.

In addition to these rations the two Inuit employed at Chesterfield received $27.50 and $30.00 respectively per month. The foods listed above cost $3.26 a week at outside wholesale prices and were the standard rations issued to RCMP employees generally. They were also 'the same class of ration as that supplied by the Hudson's Bay Company' and were described as 'much more economical and equally as satisfactory as the rations supplied in previous years' (Ibid). But not everyone was as equally impressed. Dr A. G. MacKinnon, the Medical Officer at Pangnirtung, considered that the ration issued by the RCMP to their Inuit 'servant' there was 'not properly balanced'[57]. Apparently the police counted on the native's 'being able to get a certain amount of meat to supplement the supplies granted,' but no-one seems to have checked to see if in fact he did. Dr MacKinnon found that the children of this man, who had 'been in the employ of The R.C.M.P. as their permanent servant for some years' were 'if not the unhealthiest, at least one of the most unhealthy families in the Pangnirtung district' (Ibid). He blamed their diet 'for this state of affairs.' The long-term problem, apart from the effects on

the family's growth and future health, was that the Inuit did not associate their diet with their ill health and, believing the white man's diet to be the best, the children would grow up to perpetuate the poor eating habits of their youth.

The government, who were charged with safe-guarding the health of the Inuit, operated a double standard with regard to rations issued to the Inuit they themselves employed as stevedores at ship-time. Major D. L. McKeand, who headed the Bureau of Northwest Territories and Yukon Affairs, expressed the opinion in writing that 'local produce (seals, fish, etc.) should be given the native workers at shiptime in preference to tinned meats, butter, biscuits, jam, tea, etc.'(58). But the Administration was in a dilemma, as it often was in dealing with the Inuit. 'It would be disappointing to the natives if they were denied white man's food at shiptime. Some substitutes or other form of entertainment would have to be provided otherwise the independence of the natives would assert itself and many would refuse to come to the settlement. In this event discharge of the ship would be seriously hampered.' Dr Heagerty, the Director of Public Services in the Department of Pensions and National Health, agreed in a discussion with Major McKeand that the suggestion to give Inuit workers country food at ship-time was a wise one but he also agreed that the Inuit, 'accustomed to issue of biscuits, tea and sugar in the whaling days and since by Medical Officers, R.C.M.Police, missionaries and fur-traders, are not going to be satisfied with local produce...'(59). But in an effort to reduce 'ship's cold' and other infections during ship-time

the Administration agreed, among other things, that 'Eventually tea and biscuits will only be issued -- in very small quantities -- as a treat during the time the ship is in harbour'(60).

After the Second World War the international market in furs slumped disastrously (Section 5.4 below) and many Inuit could not earn enough to purchase all their needs. This sudden change in the economic adaptation of the Inuit made it necessary for the government to evaluate conditions in the North and to reconsider the responsibility of the Administration towards the native people. Surveys were undertaken of the resources of different geographical areas and recommendations made as to what might be done to provide the Inuit with a wider and more stable economic base and a reasonable standard of living. In essence this meant providing the Inuit with more wage employment, though it also meant redistributing the population to areas where hunting conditions were favourable, assisting the hunters to improve their hunting methods, and showing them how to make greater use of the resources available (Canada, Department of Resources and Development 1952:92). Government activity increased in the North with greater administrative involvement and major construction projects like Frobisher Bay, Aklavik, Inuvik, housing schemes and school and hospital building. Commercially backed enterprises included boat-building, blanket-weaving, handicraft and art productions in which the new and rapidly developing co-operative movement was involved. Then late in

1954 the American and Canadian governments made the decision to go ahead with the construction of the Distant Early Warning system across the Canadian Arctic. All of these developments accelerated change in the Inuit way of life which, together with increasing population and decreasing game resources, forced a trend towards greater and greater dependence on wage employment. With population continuing to rise at an alarming rate into the 1970s (Duffy 1977:190) the need for increasing wage employment is as great now as in the 1950s.

The result is that many Inuit are now employed full time in a wide variety of jobs and, with hunting reduced to week-ends and a few weeks during the year, the dependence on the store for food supplies is almost complete. A booklet prepared for wives of Inuit employees on the DEW Line sums up the new situation(61),

> Because your men go to work every day they do not have much time for hunting. Because they do not hunt they do not bring home caribou, rabbit, birds, fish and seal for you to get ready for your family to eat like you used to do. Now your men have jobs like the white men so instead of bringing home the kind of food Eskimos have always eaten they bring home white men's food.

It was in fact literally true that the men brought home the weekly food supplies. Inuit employees on the DEW Line received a weekly food ration based on the needs of one adult and one child. Because the ration was ample the families had sufficient food, especially as the wage earner

had the right to three meals a day in the station. A lack of staple foods in some homes was found to be the result of the husbands' who picked up the ration being unaware of need since they themselves ate most of their meals in the station dining hall(62). 'Since the men have had even less contact with proportion of processed food than their wives, this lack of understanding is accountable.'

The booklet prepared for the wives of DEW Line employees reminds them that seal meat was 'one of the best kinds of food found in the whole world.' It kept 'bones and blood, nerves and muscles healthy.' But there was no single white man's food that could do all these things, and therein lay the danger. The Inuit were accustomed to eating one kind of food every day and day after day. The Inuit adopted the white man's food but retained their own eating habits with regard to it. They ate food like bannock and tea every day as they used to eat seal meat. 'Bannock and tea taste good but these two foods have not enough goodness to make children grow and to make adults strong. As well as eating bannock and tea every child, man and woman needs milk, fruit, vegetables, meat and oatmeal every day.'

This kind of instruction by its very publication indicates that the Inuit's food buying with their earned income was far from wise. A lot of money was wasted. The Northern Service Officer at Tuktoyaktuk complained in 1958: 'The thousands of dollars earned at wage employment during the summer has been dissipated on soft-drinks, candy, poker and mail order parcels

and, of course, on store food while working. The benefits of summer employment are hard to see'[63]. In the Eastern Arctic the Community Principal in Cape Dorset, Anne Berndtsson, complained of 'a great waste of money here on items that any south Canadian house holder or homemaker would not think of buying if they were in similar wage brackets,' especially in view of the high prices charged in the Eastern Arctic[64]. Some of the available cash was spent on food, but that no more wisely than was spent on material goods. 'People are beginning to depend upon bannock, tea, soft drinks, candy, gum and tinned foods for a diet.'

Berndtsson's memo of October 1961 is one of the most interesting with respect to recent Inuit food-buying habits. As the years go on, she points out, 'fewer people will hunt seal and as a result Canada will have a poorly nourished northern Canada,' a prophesy proved correct by the Nutrition Canada surveys a dozen years later. Much food that was purchased was merely eaten from the tin or package. 'Food value and nutrition are unheard of,' Berndtsson comments. She goes on to relate the following incident, repeated here in full, which exemplifies the situation as she observed it and which, she claims, 'is one of many that occur here often if not daily.'

> On a visit to a summer tent home, I arrived after the mother's daily trip to the store -- a daily trip in so far as daily trips can last after pay day. She had purchased the following food items: one can beets, one can asparagus, one small jar pickles, one can apricots, one can tuna fish, one dozen or more tins soft drinks, numerous packages of gum and candy, plus a twenty pound bag of flour and three pounds shortening. The tins were opened and passed out to the

> individuals in the tent. The person who happened to fall prey to the tin of cold, mushy asparagus -- took one, tasted it, immediately discarded the entire tin with its contents outside the tent door and moved over to help young brother devour the delicious sweet pickles. These foods washed down with a tin of Mason's root beer, followed by a package of gum would be novel for any picnic. However, I thought, surely something must be done here -- something long-range, something of a permanent nature -- a diet like this will kill them. This type of buying, eating and wasting lasts until the pay cheque is gone -- five days to ten days after pay day. Then if hunting is not good or they have not been inspired to hunt, they go back to bannock and tea. Surely the Canadian Government cannot agree with this type of spending. Granted these people are Canadian citizens with a freedom to use their possessions as they think fit. However, if they continue in their present manner they will never have anything.

This kind of report was extremely disquieting, and so was the 'growing problem of Eskimos scrounging from garbage dumps' reported in 1958(65),

> It has been argued that owing to the high standard of living, especially at DEW Line sites, there is much recoverable food in garbage dumps and it would be injustice to deny this to starving Eskimos by destroying it. We are not impressed with this argument for a number of reasons. First, those who scrounge at garbage dumps include only a small minority of Eskimos who do not have reasonable access to other food. They include many who have access to adequate country food. They also include many who gain high wages through permanent employment, for scrounging the garbage dumps is no longer a matter of last resort or necessity, it is becoming a widespread Arctic pastime.

In fact, reports of 'garbage gormandizing' were exaggerated. Enquiries conducted in all parts of the Arctic and at all

the DEW Line stations revealed that 'While the problem does not seem to be serious at the moment, it does come up from time to time with adverse results'[66]. Out of 42 DEW Line stations only the same four or five were involved, the chief offender being Fox Main.

While the collection of food from the local garbage dump was no longer seen as a serious problem, the selection of food from the local trading store continued to cause concern. Alma Houston pointed this out in one of her reports from Fort Chimo[49]. 'The Hudson's Bay Company store at Chimo is particularly well stocked,' she wrote. 'The manager is interested in improving this stock wherever possible. However, the present problem is how to induce the local Eskimos to take advantage of the many nutritious food items available.' She noted, for example, that there was no demand for either dried eggs or dehydrated vegetables and almost none for tinned meats because all three were too expensive and tinned meats were also too salty for Inuit taste. White beans and rolled oats, which were obtained on relief, were fed to the dogs. Some dried fruits, like raisins and prunes, were in good demand as was powdered milk, but the greatest demand was for the 'standard diet': flour. These preferences appeared to be deeply entrenched, and the major problem facing dietary reformists was to change Inuit attitudes to food. Walter Rudnicki, chief of Northern Affairs Welfare Division, complained of the same thing[67]:

> One of the major problems which [nutrition improvement] programmes have encountered is the rigidity with which certain food habits

> are maintained. It is one thing, for example, to make canned tomatoes, pablum and milk powder available, but it is entirely another to persuade them to purchase and consume them. Various devices such as education programmes, restricted relief-issues, and controlled commodity sales, have been employed to overcome this problem but while some success has been achieved, progress is slower than the situation demands.

Some comments on Inuit food preferences in 1961 were made in a letter by P. A. C. Nichols, the manager of the Arctic Division of the Hudson's Bay Company, and they illustrate to a certain extent the slowness of progress with regard to changing Inuit food habits(68). He noted that the Inuit were using food mixes more and more as time went on and they acquired the facilities for using them. This recalled the ill-fated bannock mix that was offered by Northern Administration but rejected on account of its high cost. Now vitaminized flour was sold exclusively in the Hudson's Bay Company stores and the Inuit were mixing this themselves with the same ingredients used in the manufactured bannock mix, thus producing a fortified bannock that was much cheaper. Dehydrated foods and fruit juice crystals were available in many stores and the Inuit were 'gradually' acquiring a taste for them, although, as Alma Houston had also found at Fort Chimo, they were not widely sought after. Margarine and skim milk powder were in large demand and used in addition to whole milk, butter and lard.

The worst food habits, as has been the case for at least half a century, are to be found closest to centres where white cultural input into the arctic ecosystem is high and

where the Inuit are more involved in wage employment, as in the larger and more accessible settlements. This was brought out by Schaefer (1964) and by comparing the findings of Sayed, Hildes and Schaefer (1976a) in northern Foxe Basin with those of the Nutrition Canada survey (Canada, Department of National Health and Welfare 1975). The more inaccessible Inuit groups continued to live on a diet dominated by country foods. Davies and Hanson (1965:208) estimate that only 10 to 25 per cent of the diet of the Central Eskimo was obtained from trading posts. This included flour, lard, baking powder, rolled oats, rice, biscuits, pablum, butter, dried milk, raisins, dried fruit, sugar, bacon, beans, jam, tea, salt and coffee.

> Biscuits and flour are the items purchased in the largest quantities; 200 lb. of flour for a family of four, and 4 lb. of baking powder to make bannock would be an annual supply. The same family would buy 20 lb. of tea and 5 lb. of coffee, both made very weak -- e.g. 2 to 4 teaspoons to a gallon for tea and sufficient coffee to colour the water brown. A family living in a settlement will consume more store food, thereby diminishing their intake of native food.

At Pelly Bay, where there was no trading post, store food was available through being brought in by dog-team from Repulse Bay. Davies and Hanson estimate that the 130 Inuit in Pelly Bay and local camps 'purchase 650 lb. of tea, 150 lb. of coffee, 200 lb. of flour and rolled oats, and 200 lb. of baking powder.' Sugar's being too heavy to freight by dog-team, 500 bottles of saccharine were used instead.

In the Spence Bay area in 1963 Pat Jordan found that

the only store-bought foods consumed in addition to caribou, fish, fowl and berries were tea and bannock, and bannock was eaten for only one month of the year at an average of six ounces per person per day(31). In Gjoahaven the same year Jean Briggs noted that 'nothing but fish and tea are eaten regularly; other items are eaten very occasionally, and only as supplements to the staple fish'(69). In the Eastern Arctic along the south coast of Baffin Island in 1958 the Inuit lived on 'store boughtened food such as flour, baking powder, lard, salt, sugar, tea and milk' along with 'five main types of meat... i.e. seal, walrus, white whale, fish and caribou'(70). Kemp (1971) found much the same diet in the same area in the 1960s with the addition of biscuits, candy and soft drinks. In one household flour made up 53 per cent of the calories from foodstuffs bought at the trading store and in another household lard made up 23 per cent. The consumption of lard in the first household -- 10 per cent -- would have been higher except that the members there preferred the use of whale fat for making bannock. As one would expect the quantities of store-bought foods increased markedly at those times of the year when money, either from wage labour or social assistance, was available. But apart from the staples and tea, tobacco and candy there was 'no strong desire for non-Eskimo foods.'

> When vegetables are bought, it is usually by mistake. Canned meats, although occasionally eaten, are not recognized as "real" food. The villagers like fruit, but it is never bought in large quantity. Jam, peanut butter, honey, molasses, oatmeal and

> crackers all found their way into the two households. They are consumed almost immediately.
>
> (Ibid:113).

An elderly man from Pond Inlet in conversation with Hugh Brody (1975:129) also stressed the preference among the Inuit for country food.

> In the old days we Eskimos used to live only on wild animals. The old people were brought up on wild country foods. Their stomachs are used to that, and even today there are many who can buy good things at the store but still prefer to eat the wild animals with the blood and everything, so that they are really satisfied. It is only with the wild country food that they are satisfied. They get weak on store food, and these men as old as I, we have to try and hunt for other old people. But there are today men who do not really bother hunting; they have to stay in the settlements. In the old days we all had to be anxious about hunting, we could hardly wait. Today the men do not seem to be the same way. They have got better equipment, but I wonder how come they do not seem to be able to get the same amounts of good wild country food.

Southern food may be said to be delicious but 'it lacks all the essentials of true food and is widely regarded as no more than an appetizer' (Ibid:130). When no wild food is available in a settlement the Inuit grow depressed. Brody records that one summer he saw some settlement hunters, 'who were well able to buy food at the local store, trying to shoot seagulls near the garbage dump to supplement store food with some <u>real</u> meat' (emphasis in the original).

Usher (1976:117) also claims that 'Native people like

country food better than store-bought food, and indeed many insist that a steady diet of imported foods would be abhorrent to them.' He estimates (Ibid:115) that a family primarily dependent on the land might obtain a dozen caribou, 60 geese and 500 pounds of fish a year, a modest harvest in the Western Arctic but equivalent to $6,200 worth of meat. The components would vary from place to place and there might be other products to consider, like whale meat and muktuk. But even a man working for wages full-time and hunting only at week-ends and on holidays might reasonably expect to get 4 caribou, 30 geese and 500 pounds of fish: together worth about $2,800. Usher points out that these are significant contributions to the household economy, and it is easy to see why the Inuit are so concerned about the continued availability of country food. The total estimated volume of the meat harvest of the Western Arctic would, on a substitution basis, probably be worth over $1 million a year.

2.6 Relief

Relief in the context of the Canadian Arctic is an issue of food and other basic necessities to Inuit unable for whatever reason to supply their own. Because the Inuit inhabit one of the least hospitable environments on earth and have no recourse to plant foods as a more dependable source of food than hunting, hunger has probably always been a part of their way of life, though occasions when hunger threatened the lives of Inuit almost certainly increased

as a result of adopting the trapping ecology and relying on the trader and the store rather than the land. This is a controversial statement, and indeed the question of starvation among the Inuit needs closer study than has been devoted to it. The incidence of hunger is obviously related to the abundance of game in the area, and the area most affected by hunger has been the Central Arctic and especially the Barren Grounds where the Inuit put so much more reliance on less predictable land mammals, especially the caribou. In other areas of comparatively more assured supplies of sea mammals and fish the incidence of starvation has probably been exaggerated. In southern Baffin Island, for example, Kemp (1971:108) notes that whereas the 'threat of hunger is a frequent theme in village conversation... the oral tradition that serves as history gives little evidence of constant privation... A 75-year-old resident of the southern coast was able to recall only one year when severe hunger affected a large segment of the population.' Although increasing access to imported, store-bought foods has been a factor in reducing the risk of starvation in general, the practice of sending Inuit into poor hunting areas to spend all winter trapping foxes has counteracted the positive role of the trading post in this respect by increasing the incidence and severity of local periods of starvation. Furthermore the introduced inferior food staples, with which the trapline Inuit were grubstaked, often displaced the much more nutritious native food.

No white man able to help any Inuit in need would allow

them to starve, and the issue of relief on an informal basis goes back to the whaling days (e.g. Ferguson 1938:115). Formal arrangements for relief were worked out when the Hudson's Bay Company began trading with the Inuit and assumed full responsibility for the welfare of their trappers and their families. Only rarely did the government pay any bills for Inuit relief. It was to the advantage of the Hudson's Bay Company to see that all their Inuit employees and customers were supplied with all the essentials to enable them to live and trap foxes from which the Company received its return. Any unrecoverable advances were written off and considered as relief(71). Later the Company found it necessary to ask the government to pay relief costs to widows, orphans, the infirm and the physically handicapped, persons who did not produce any revenue for the Company. About 1948, after the price of fox skins dropped from around $20.00 each to as little as $3.50, the Company asked to be relieved of the cost of supporting inefficient trappers also (Ibid). An inefficient trapper was one who failed to bring in more than an average of ten foxes a year over the previous five years. He thus became a subject for government assistance and was no longer a burden on the Hudson's Bay Company. Thus the responsibility for the relief of destitute Inuit in the Northwest Territories and northern Quebec came to rest with the Department of Resources and National Development who delegated the administration of relief in the field to the RCMP or, where no RCMP detachment existed, to the local trader(72).

> The effective handling of relief is recognized as being one of the most difficult tasks facing local administrators. Assistance too readily obtained has a tendency to encourage indigency, whereas too niggardly a policy may result in undue hardship and the impairment of health. During even the best hunting and trapping seasons, there may be some individuals who will require direct relief, either because of age, sickness or other disability. It should be emphasized, however, that the aged and infirm, and widows and orphans, are not to be regarded as automatically eligible for direct relief. Where relatives are in a position to maintain or assist them, they should be expected to do so. On the other hand, it is necessary to ensure that no undue hardship is placed on the individual or the community by withholding assistance.

The philosophical debate about whether or not the issue of relief breeds dependence and puts a premium on laziness goes back a long time and will no doubt continue for a long time to come. As early as 1928 the Director of the Northwest Territories and Yukon Branch noted: 'It appears that in areas particularly around the Hudson Bay and Strait, the natives are depending more and more each year on relief being furnished by the Government and as a consequence will not make the most of their opportunities to provide their own living'(35). 'Obviously relief offers many problems,' wrote Dr J. A. Bildfell, the Medical Officer at Pangnirtung, in 1941, 'and I am not disregarding the fact that it is our duty to prevent starvation wherever and whenever it exists but I am definitely of the opinion that in extreme need... the rations as provided will not relieve the stress and is [sic] therefore of little or no value -- providing false security, encouraging

a bad habit, constitutionally undermining the native and is also wasteful[43]. The question of whether relief does in fact provide false security and encourage bad habits is open to debate and may be answered only subjectively according to one's individual philosophy and temperament. But the more serious question, that of 'constitutionally undermining the native' is open to objective scientific analysis. For a Medical Officer to consider relief rations harmful is a serious indictment of the system.

Having control of relief rations was an excellent opportunity for the government to introduce good eating habits to the Inuit. As Dr J. S. Willis of Indian Health Services put it, relief rations 'provided an opportunity for us to see that the Eskimos were given foods which provided kinds of nutrition we knew to be lacking'[73]. The opportunity was missed. In 1942 Dr J. J. Heagerty, Director of Public Services in the Department of Pensions and National Health, told Major McKeand, the chief of the Bureau of Northwest Territories and Yukon Affairs, that the Canadian Council on Nutrition should be able to prescribe a better relief diet for the Inuit than the customary ration of flour, tea, sugar and biscuits which he described as 'deficient substitutes for country produce'[59]. The medical profession and others familiar with northern conditions had consistently referred to the deficiency of the relief diet in the past, but unfortunately 'nothing much had been done to remedy it' (Ibid). The relief rations issued by the Canadian government were in fact no better than and not much different from the

hand-outs that whalemen gave to hungry Inuit at the end of the nineteenth century. In a list of nine months' relief rations issued to sick and destitute Inuit in the Pangnirtung, Clyde River and Pond Inlet areas in 1924-25 the only food items to appear were various combinations of flour, biscuits, molasses, tea and baking powder; at Pond Inlet and Clyde River only biscuits, flour, molasses and tea were issued; and at Pangnirtung rolled oats were issued twice and sugar once(74). RCMP reports going back to 1929 were critical of the fact that these same foods were issued to sick and destitute Inuit in 'comparatively substantial quantities' on the authority of the Medical Officers at Pangnirtung(75).

The Northern Administration's own medical specialist, Dr L. D. Livingstone, was against issuing imported foods to the Inuit. In 1928 the Director of the Northwest Territories and Yukon Branch wrote to the Hudson's Bay Company's Fur Trade Commissioner: 'Our Dr L. D. Livingstone, who has made a careful study of the Eskimos, particularly in Baffin Island, and the diet best suited to their needs, is strongly of the opinion that in the best interest of the natives, relief rations should be confined almost entirely to meat and fish'(76). This was passed on officially to those responsible for issuing the relief(77),

> We are informing the Companies as well as the Police, that such rations as milk, butter, bacon, patent medicines, etc., which are considered luxuries among the Eskimos, must not be issued as relief, except in the case of infants or in special cases, but that such rations should be confined as much as possible to meat and fish. This is carrying out the opinion of Dr. Livingstone and Major Burwash. Dr. Banting too expressed the same opinion when he said "keep the native, native",

> which meant that he should be rationed with his own kind of food and not that of the white man's [sic].

The basis of this advice was that in 1928 it was obvious to competent northern observers that those Inuit 'still living almost exclusively on their natural diet of sea mammals and fish' were 'very much superior' to those eating imported foods (35). To counteract any shortage of meat the government shipped 6,500 pounds of dried buffalo meat to northern ports in 1928 for issue as relief. Dried buffalo meat was still being given out in some areas as late as 1956, along with the usual flour, lard, baking powder, sugar and tea(78), but the carbohydrate rations alone remained the basic form of relief for most Inuit.

The Administration thus failed to follow medical and other advice concerning relief rations. Country foods, that could have been dried or smoked and stored away for issue as relief, were ignored. The old unbalanced inadequate rations for the most part continued to be issued. This is apparent from relief accounts and reports of destitution. In 1933-34 in the Cumberland Sound area, for example, 'a typical relief ration per week' was ten pounds of flour, a quarter pound each of baking powder and tea and a quantity of molasses(24). During the winter of 1939-40 in the Back River district there were very few caribou and many Inuit camped there had considerable difficulty in securing enough food and dog food(79). The caribou seemed to have moved out of their usual range and were plentiful along the coast south of Chesterfield

Inlet. In addition, there had been a 'comparative shortage' of fur throughout the entire district which is why many Inuit were unable to buy provisions from the trading company. One such Inuk, Kabloonak, to feed the nineteen people in his camp, was issued with 49 pounds of flour, 25 pounds of biscuits, 12 pounds of rolled oats, 5 pounds of lard and half a pound of tea(80). In the same area at the same time the Inuk Amarrok was 'unable to get supplies on credit from the trading company owing to his inability to get furs during the past trapping season, and previous debt which he had been unable to liquidate'(81). His family was issued with flour, biscuits, rolled oats, lard, sugar, baking powder and tea. Flour, baking powder, tea and lard were similarly issued to a destitute Inuk at Eskimo Point in July 1940(82) and to another every two weeks at Chesterfield Inlet(83). In the Cumberland Sound area in 1941-42 two types of monthly relief rations were issued depending on family size and individual circumstances(84):

Ration A	Ration B
20 lbs flour	40 lbs flour
4 " sugar	6 " sugar
1 " tea	1½ " tea
1 " baking powder	2 " baking powder
2 boxes 30/30 cartridges	2 boxes cartridges

It is not surprising that so many Inuit lived on a diet almost exclusively of bannock and tea. 'It is my private opinion,' wrote the Medical Officer at Pangnirtung in 1941, 'that advances such as flour (white), tea, sugar, biscuits, etc., and in the quantities which have been issued for this purpose

will never save a camp from ultimate starvation in case of extreme need, and relief is to be discouraged at any other time'(43).

These were emergency rations issued at a time of need and meant to be a temporary measure till the Inuit concerned obtained their own country food. For example, during the epidemic of 'ship's flu' and paratyphoid fever at Pangnirtung in the fall of 1941 these emergency relief rations were issued to the boat crews working at contacting stricken camps(84). This form of relief was also issued to departing boats carrying patients back to their camps. 'Considering the amount of stress and disorganization in the lives of the natives,' wrote the Medical Officer, 'this issue (shown on H. B. Co. account as "Emergency relief") was comparatively slight' (Ibid).

But the major danger was not to those for whom the rations were merely a temporary relief of native food shortage. The danger was to those who had to subsist on such a diet permanently, like the widowed, aged and infirm who were supported by the government. A list of rations supplied to destitute widows in the Northwest Territories in 1947 consisted of the following(85):

24 lbs flour
10 lbs sugar
10 lbs rice
1 lb tea
1 lb baking powder
3 lbs tallow or lard
1 pkt matches
1 gal coal oil

Dr P. E. Moore, Director of Indian Health Services, described the ration as 'grossly inadequate in vitamin A and ascorbic acid, even though it supplies a reasonably generous amount of calories. It is also rather low in calcium, iron and vitamins'(86). Dr Moore recommended the following changes:

(1) Flour provided should be Canada Approved White Flour since this will substantially increase the amount of thiamine and slightly increase other nutrients.

(2) The following foods and quantities should be added to the list: dried beans, 4 lbs; dried prunes, 2 lbs; milk, evaporated, 8 lbs, or if in dried form, 1 lb; tomatoes, canned, 7 cans, size $2\frac{1}{2}$.

(3) Reduction of amount of rice from 10 lbs to 4 lbs.

'The caloric content of the revised diet,' Dr Moore commented, 'would be between 2800 and 3000 calories which is more than adequate but the nutrient figures would be still at a bare minimum level. Nevertheless, I think that they would be very much better than the present ration.'

Relief rations in general were revised along the lines of Dr Moore's recommendations in this particular case (Table 2.1) -- omitting prunes was one departure -- but, as Dr Moore himself had said, the revised issue was nutritionally still at a bare minimum level and it continued to come under criticism. Dr J. S. Willis, who served under Dr Moore as Regional Director responsible for the Eastern Arctic, told a meeting in 1955 that a medical survey carried out that summer came to the conclusion that 'the rations issued as relief

Table 2.1: Relief schedule of monthly rations

Foods	1 person any age	2 persons any age	3 persons any age	4 persons any age	5 persons any age	6 persons any age	7 persons any age
Flour (baker's)	24 lb.	40 lb.	49 lb.	60 lb.	72 lb.	84 lb.	98 lb.
Rolled oats	5 lb.	7 lb.	9 lb.	11 lb.	13 lb.	15 lb.	17 lb.
Rice	3 lb.	4 lb.	5 lb.	6 lb.	7 lb.	8 lb.	9 lb.
Sugar, Jam or Molasses (one or the other)	3 lb.	4 lb.	5 lb.	6 lb.	7 lb.	8 lb.	9 lb.
Lard, fortified margarine or beef fat	3 lb.	5 lb.	7 lb.	9 lb.	11 lb.	13 lb.	15 lb.
Beans, dried, or extra rolled oats	4 lb.	6 lb.	8 lb.	10 lb.	12 lb.	14 lb.	16 lb.
Tea	1 lb.	2 lb.	3 lb.	4 lb.	5 lb.	5 lb.	5 lb.
Baking powder	½ lb.	1 lb.	1 lb.	1½ lb.	2 lb.	2 lb.	2 lb.
Salt	½ lb.	½ lb.	½ lb.	½ lb.	1 lb.	1 lb.	1 lb.
Cheese	1 lb.	2 lb.	2 lb.	3 lb.	3 lb.	4 lb.	4 lb.
Milk	8 evap. or 1 dried	12 evap. or 2 dried	16 evap. or 2 dried	20 evap. or 3 dried	24 evap. or 3 dried	24 evap. or 3 dried	24 evap. or 3 dried
Tomatoes, canned (where available)	6 tins	10 tins	14 tins	18 tins	20 tins	20 tins	20 tins

were not nutritionally sound'[73]. James Cantley of Arctic Division agreed that the ration list could well be improved. So many more foods were available in the North than when the list was drawn up and that factor alone made its revision desirable. Dr Willis volunteered to redraft the list after consultation with the Nutrition Division of his department.

But to issue nutritionally better foods as relief rations was not to guarantee that the Inuit enjoyed the benefit of them. Beans and rolled oats, for example, were fed to the dogs in both the Eastern[49] and Western [87] Arctic. From the Western Arctic the Welfare Officer at Aklavik commented on feeding rolled oats to dogs: 'This is to be expected when we consider the economic and social conditions of the people in receipt of rations. These people are not able to secure enough fish to satisfy their own needs.'

The major criticism with regard to relief rations was that they were not used to educate the Inuit in good eating habits, if only by example. Instead they reinforced and perpetuated the long-held belief among the Inuit that the best diet was bannock and tea because that is what the white man gave them.

The same criticism can be levelled against the Family Allowances system that was introduced in 1945. Local registrars paid out Family Allowances not in cash but in credit vouchers, and the Inuit recipients exchanged the credit vouchers at the nearest trading store for any of an authorized list of carefully selected goods. That system did much more to inculcate southern Canadian food habits among the Inuit

than to encourage the consumption of traditional foods. Family Allowances, together with pensions for the old, blind and crippled, were another form of government relief, even though the Administration made a distinction(88),

> Family Allowances is designed to supplement basic requirements and has been found particularly valuable in introducing new and nutritious foods into the North, especially special items such as milk and pablum. Relief on the other hand is issued to families when it is found that they are definitely unable to maintain themselves -- it is the supplying of basic requirements to families in need and such financial help is the responsibility of this department.

When the Family Allowances Act went into effect the government gave careful thought to the question of how the native children could be made to benefit most by its provisions. The health of the Inuit, especially that of infants and young children, had been the subject of serious consideration for some time. Medical personnel had linked the decline in child health to the fact that there had been a noticeable trend away from the purely native diet -- 'which in itself would appear to be unfortunate but inevitable'(89) -- and that the substitute foods, namely bannock and tea, had proved to be inadequate to maintain health standards. The result was infant and child mortality of alarmingly high rates.

But observations by medical officers during the war and the immediate post-war years showed that even in the more primitive groups who lived most completely off the land there

was often malnutrition, particularly amongst the small children. In view of these facts the government considered certain modifications in the issue of Family Allowances credits advisable for the welfare of the native children (Ibid).

> In 1947 substantial quantities of powdered milk (with wire whippers) and pablum were stocked in most of the northern trading posts. It has been decided to encourage the constant use of these foods and in future, irrespective of the nature of the fur year, milk and pablum are to be issued for children up to seven years of age as regularly as is possible taking into consideration the nomadic habits of the people and the difficulties they experience in the transportation of goods. It is realized that during prosperous years the natives have not on their own account been purchasing milk and pablum. It is hoped that by distributing these regardless of their financial condition, they will become accepted as staples in the Eskimo children's diet. It is urgently requested that Registrars try to obtain the full cooperation of all traders and other personnel dealing in any way with the natives in having those foods stocked so they may be supplied as regularly as possible as a Family Allowances issue, especially to children under seven years of age.

The hope of those responsible for the administration of Family Allowances was that in subsequent years milk would be accepted and consumed by all children up to sixteen years and by expectant and nursing mothers. The co-operation of all those dealing with the Inuit in inculcating a taste for milk and pablum among the children was considered an urgent necessity. And the effort appears to have met with success. 'Family Allowances with its controlled issues in kind,' wrote the

Area Administrator of Great Whale River, 'has proved to be of real benefit in that it has been educational in fact, inculcating tastes for strange but nutritious foods, particularly milk and pablum for the children'[25]. Hindsight shows that in view of undesirable consequences that became apparent later (Sections 2.7 and 5.3) this faith in milk and pablum was misplaced. But faith at that time saw miracles where in reality none existed. For example in 1949, only three and a half years after Family Allowances came into effect, the RCMP reported from southern Baffin Island[90]:

> The benefits derived from Family Allowances are quite in evidence. The general health seem s to be improve d and the children who drink milk daily have developed more resistance to sickness. Such is the consensus of opinion among the natives. In fact most children have developed a taste for milk and the parents are no longer required to more or less force the children to drink it.

Statistics collected on the Eastern Arctic Patrol and by agents elsewhere in the Arctic supported the RCMP findings[91], but the fact is that during the late 1940s and early 1950s morbidity in children due to acute as well as chronic diseases, like otitis media, tuberculosis and others, went up markedly rather than down (O. Schaefer: pers. comm.). This is now attributed to the abandonment of traditional infant feeding practices in favour of cows' milk and pablum, the very products whose use the Family Allowances programme was encouraging. The effect of Family Allowances in promoting

these and other southern Canadian foods is apparent from the available records. At Chesterfield Inlet, for example, traders stocked no milk at all prior to 1946. But in 1946 as a result of Family Allowances they sold 428 pounds; in 1947 596 pounds; and up to July 1948 655 pounds[92]. Similarly the sale of rolled oats jumped from 288 pounds in 1944-45 and 454 pounds the following year to 1,812 pounds in 1946-47, the first year that Family Allowances came into force. Powdered eggs were another food included on the authorized list of goods[93] for issue to the Inuit from Family Allowances credits. In 1949 the Deputy Commissioner of the Northwest Territories noted that the 'Issue Vouchers received from almost all points in the Western Arctic indicate that this valuable food is becoming increasingly popular with the natives'[94]. Not only were powdered eggs a rich supplement to the native diet but, like flour, they were packed in such a way that the Inuit could easily transport them from the settlements to the winter hunting and trapping areas.

Other food items obtainable on Family Allowances were a cause of concern. Observers noted that flour and pilot biscuits, for example, were being purchased in very heavy quantities in some places, an indication that the Inuit were using them to a large extent for family maintenance. In one instance, the Eastern Arctic Patrol in 1950 found that the District Registrar at Frobisher Bay was issuing large quantities of flour and sugar with no milk, pablum or rolled oats because the Hudson's Bay Company was out of these last three items[95]. Similarly at Pangnirtung and Cape Dorset the registrars were

issuing excessive amounts of flour. In view of the lack of nutritive value in flour or biscuits this was deplorable. In addition, to allow the depletion of accumulated credits in this way had the apparent result of encouraging the Inuit to remain idle around the post and neglect their regular hunting and trapping activity. Field officers recommended that the issue of flour and biscuits should be limited. Thus a family with one child was not to receive more than 15 pounds of flour and biscuits, either separately or in combination, and not more than 35 pounds per month regardless of the size of the family. When the anthropologist, J. J. Honigmann, then working at Great Whale River, criticized the limitation of the flour issue, the Deputy Commissioner of the Northwest Territories replied(96),

> Family Allowances is aimed at improving conditions for the Eskimo children -- not at supplying basic needs. Bannock is a necessity amongst the Eskimos, as you know, but around Great Whale River it was found that the natives had been using their Family Allowances credits to obtain it, not for the improvement of child welfare but for the basic subsistence of the whole group, whereas it should have been procured through the income earned by the natives or failing this, from relief. Further, the regular issue of flour and sugar on Family Allowances was encouraging the natives to return too often from their camps to the post.

The ingredients of bannock -- flour, lard and baking powder -- were items well established in the diet of the Inuit, items that the Inuit needed no encouragement to buy. Families that

could not afford to buy them from earnings because of poor local conditions ordinarily obtained them as debt or as relief assistance under the current policies of most of the trading companies, or of the government where the families of incapacitated, old or widowed parents were concerned. One of the main purposes of Family Allowances, one that made Family Allowances so significant as a means of introducing more nutritious foods to the Inuit, was to ensure that the Inuit received something over and above what they would ordinarily subsist upon. Baking powder and lard were considered to be part of the basic subsistence and were therefore not part of the Family Allowances issues except in certain cases. Family Allowances was an effective medium through which to develop a taste and a demand for foods like milk, pablum, eggs, tomatoes. No education was needed to promote the use of bannock, and the purchase of its ingredients simply left less credit for more desirable foods. Sugar also came under this category. As with flour and biscuits there was too great a purchase of sugar under Family Allowances. The government therefore limited the issue of sugar to a maximum of 5 pounds to a family with one child and not more than 15 pounds per month to any family regardless of the number of children.

The impact of Family Allowances and other factors on infant feeding is discussed in the following section.

2.7 Infant feeding

A certain proportion of the energy acquired and consumed

by a society is devoted to infants: an investment in the future well-being of the population on which no society will stint. Like any other aspect of the cultural system infant feeding practices and attitudes vary with environment, subsistence, economic and educational level and also with technology, for the feeding of infants in many modernized and modernizing societies has become as artificial and as scientifically and commercially controlled as feeding farm animals or milking cows. The natural way to feed an infant is by suckling, a method common to all mammalian species. Weaning age varies, but in more than 60 per cent of cultures studied by Whiting and Child (1953) weaning was found to begin between the ages of two and three. This includes the Inuit. In traditional Inuit society infant feeding was similar to that of other aboriginal peoples, consisting for the first half year exclusively, and for the next two or two and a half years predominantly, of mother's milk (Schaefer 1975). Mother's milk was supplemented increasingly from five to eight months with fine-cut or even pre-masticated morsels of fish and meat. This was one of the oldest-known Inuit practices. One of the first Europeans to meet and observe the Inuit wrote in 1578: 'The women carry their sucking children at their backes, and doe feed them with raw flesh, which first they do a little chaw in their owne mouths' (Anon. 1578:372).

Schaefer (1975:9) considers that the most serious development in the nutrition of Inuit children since the mid-1950s 'has been the shortening or even complete abandonment

of breast feeding by most Eskimo mothers. This is a worldwide phenomenon, which has been shown to have harmful effects, especially in developing nations.' Research by Schaefer showed that while 2.7 per cent of adults had been bottle-fed, 49.5 per cent of children had been fed from the bottle before twelve months of age(Ibid:5). The new practice occurred least in hunting camps, more frequently in village-type settlements and most of all in urbanized Frobisher Bay where 40 per cent of children were bottle-fed before the end of their first month and nearly 75 per cent before the end of their first year. In hunting camps the rates were 10 and 32 per cent respectively. Among the more acculturated Inuit even the difficulty of acquiring baby foods did not cause a return to breast-feeding, though it would have been more convenient; instead, every effort was made to obtain the manufactured baby foods. This happened, for example, at the DEW Line sites where Inuit were employed, as appears from a report by home economist, E. J. MacKinnon(62):

> The nutritional state of the small children at the sites has been a concern of those familiar with the area. The F. E. C. [Federal Electric Corporation] ration for families of the Eskimo employees does not contain special infant foods. The mothers are not yet familiar with the preparation of foods suitable for infants and small children from processed food. There being no trading posts at the site for the purchase of these foods, the writer recommends -- that provision be made for the Eskimo employees on the Dew Line to obtain infant food supplies such as pablum and baby food.

Writing in 1961 Ms MacKinnon was following the fashion of the times with regard to the feeding of infants. One cannot therefore blame the Inuit. But the encouragement given to the introduction of pablum and the praise lavished on it as a good and nutritious food for children from the early 1950s appears in hindsight to have been ill-advised. Together with the easier availability of canned and powdered milk and feeding bottles, pablum tended to discourage and thus to shorten the traditional breast-feeding and early meat-eating habits. The change to bottle-feeding had disastrous consequences for the demographic stability (Section 5.3) and health of the Inuit. Greater morbidity resulted, especially anaemia and diseases of the respiratory tract, ears and gastro-intestinal tract. The zeal of Medical Officers at that time and of administrators influenced by them in pushing for greater use of cows' milk and pablum -- foreign products which the Inuit had done well without -- is understandable in the light of contemporary nutritional teaching and pediatric opinion. These tended to exaggerate the benefits of non-human milk and even more so of pablum. There was then no awareness of the higher bio-availability, genus-specific nutrient balances and above all the specific immunological and other anti-infectious and generally beneficial effects of human milk.

Health personnel and school-teachers were also responsible for discouraging the age-old practice of feeding infants pre-masticated meat and fish. Schaefer (1975:6) describes these people as 'more hygiene- than nutrition-conscious.' With tuberculosis incidence so high at the time it might

appear that there was good justification for the abandonment of pre-mastication. But according to Schaefer (pers. comm.) tuberculosis was practically always (his emphasis) transmitted to northern natives, especially to children, by inhaling tubercle bacilli contained in air-suspended droplets coughed up by infected adults in the same room or -- more rarely -- by inhaling tubercle bacilli whirled into the air from dried-up expectorate The chances of an open tuberculous mother infecting her infant via fine air-suspended droplets inhaled by the infant were overwhelming, and there was little likelihood of a child's avoiding infection in this way. But the chances of an infant's being infected by food transferred from the mother's mouth via the infant's mouth and gastro-intestinal tract were so remote that advice given to discourage this traditional practice was completely unfounded and harmful out of proportion even of imagined benefits because essential nutrients, especially iron and a number of other minerals and vitamins important for healthy growth and development after the age of six months were thus denied to Inuit infants. This made them less resistant to infections in general, including tuberculosis. However, the fact that Medical Officers discouraged the practice of feeding pre-masticated food to infants is understandable at a time when medicine, and in particular northern medicine, was almost exclusively pre-occupied in combating infectious diseases and chasing germs (97). But as a result many infants in places like Frobisher Bay and the village-type settlements got only cereal, bannock and biscuits before they ate from the table at ten to twelve

months. Bannock, the customary new first solid food supplement, often remained the dominant food provided, along with mother's or cows' milk, until four to five years. On the south coast of Baffin Island Kemp (1971:113) found that mothers fed non-nursing infants and young children 'a kind of reconstituted milk. A daily ration consisted of 48 ounces of water containing 1.2 ounces of dry whole milk and 1.7 ounces of sugar.'

The new regimen for infants led to a relatively high incidence of iron deficiency in this age group, particularly in the settlements of the lower and middle Arctic (Schaefer 1975:8). Investigations by Sayed, Hildes and Schaefer (1976b: 255) among the Iglooligmiut showed that for only 41 per cent of infants the first solid foods were the traditional seal, caribou or fish; whole cereals and strained foods were among the first for 35 per cent; while the remainder received biscuits, cookies and candies as their first solid foods. Schaefer (1975:7) notes that in the Mackenzie delta the mean age at which cereal is introduced is now six weeks compared with four to six months twenty years ago. He comments:

> I wonder if the feeding of solids, cereals in particular, at such an early age has not counteracted our efforts to maintain breast-feeding for a minimum of six to eight months. The wisdom of feeding cereals, always sweetened with sucrose, so early is now being seriously questioned for a number of reasons: for instance, undue stimulation of fat cell multiplication favouring the development of obesity, hyperlipidemia, hyperinsulism, and diabetes.

2.8 Alcohol

Driver (1969:109) has shown that among the native peoples of North America 'the distribution of alcoholic beverages falls almost wholly within the bounds of horticulture.' For the world as a whole there is a definite correlation between alcohol and agriculture for the simple reason that liquors were made principally from domesticated plants. In an environment like the Arctic, where even wild plants play a minor role in the ecology of the Inuit and domesticated plants do not exist, it appears that there was no knowledge of alcohol before the coming of the Euro-Americans, probably spreading most rapidly in the Canadian Arctic in the last thirty years or so of the nineteenth century (Foote 1964). It is not known how much alcohol was introduced each year or what its importance was to Inuit society.

But by the beginning of the twentieth century alcohol was considered important enough -- at least by the Administration -- for legislation to be passed with regard to it. In 1906 the government enacted that:

> No intoxicating liquor or intoxicant shall be manufactured, compounded or made in the Territories, except by special permission of the Governor in Council, nor shall any intoxicating liquor or intoxicant be imported or brought into the Territories from any province of Canada, or elsewhere, or be sold, exchanged, traded or bartered, or had in possession therein, except by special permission in writing of the Commissioner.
>
> (Section 86, Chapter 62, R. S. 1906, N. W. T.)

Outside the jurisdiction of the law at that time was Ungava, and reports reached the Hudson's Bay Company to the effect that liquor was being 'indiscriminately' distributed amongst the natives there[98]. Unfortunately when this complaint was raised in 1909 the future of Ungava as part of Quebec or part of the Territories was being decided by Parliament, and no immediate action could be taken. 'In the event of there being no legislation for the partition of the Territories among the Provinces,' wrote the Commissioner of the Northwest Territories, 'I shall then ask for authority to take the necessary measures for the control of the liquor traffic'[99]. But even where the law was operative there was continuing liquor traffic from the white to the native population. For example, in 1919 C. H. Clarke, the manager of the Hudson's Bay Company post at Herschel Island, was found guilty of giving whiskey to the Inuit and fined $150[100]. Clarke, who later became President and General Manager of the Canalaska Trading Company, was well-known for supplying liquor to the Inuit[101].

Legislation can remove the liquor but not the demand for it. In such a situation, where illegal supplies of liquor are not readily available, substitutes must be found. In the Canadian Arctic these roughly follow a chronological pattern of increasing sophistication beginning with culinary essences and extracts and household toiletries in the first quarter of the present century, progressing to methylated spirits and wood alcohol in the second and to home brewing in the third. By the end of the third quarter drinking had been

made legal and then restricted again by the wishes of the Inuit themselves.

The attraction of essences and extracts is that the basis of them is pure alcohol and they are highly intoxicating. Seven samples of essences seized by the police at Le Pas in 1911 were found to have alcoholic volumes ranging from 20.33 to 33.06 per cent and proof spirits ranging from 35.63 to 57.94[102]. Similarly, analysis of cola, grape, lemon, lime, orange and strawberry flavourings and of ginger ale taken from a store at Fort Smith in 1923 revealed alcoholic percentages ranging from 39.74 for grape to 69.38 for lemon[103]. Toiletries like Colgate's Lilac Imperial Toilet Water, according to the information on its own container, had an ethyl alcohol content of 73 per cent. Syrup of Figs and Elixir of Senna, according to the bottle labels, contained 6 per cent alcohol[104]. The RCMP and others reported that the Indians, Inuit and half breeds in the Territories were drinking these preparations for their alcoholic content, but 'on investigation it had never been proven that the practice was in any way general'[105]. Yet in spite of the lack of clear indication of the actual extent of the consumption of the products, W. W. Cory, the Commissioner of the Northwest Territories, by order dated 28 August 1924 banned the importation, manufacture and possession of such preparations as fruit tinctures, vegetable spirits and other extracts and essences[106].

By this time the use of the Primus stove was becoming general among the Inuit, and the Administration was alerted

to the fact that wood alcohol, canned heat or similar product was required to light the stove. 'If... it is reported that these preparations are being used as intoxicants, then their importation should... be restricted under a permit system'(107). But the Administration knew already that these were being used as intoxicants. The Department of Health had already informed the Department of the Interior 'that methylated or wood alcohol has been used for beverage purposes'(Ibid). In the so-called canned heat there was a relatively large proportion of methylated spirit, and by using an improvised sack the alcohol was very easily diffused into a glass of water. A call was made to forbid the sale of this product in the Territories, but because this 'would involve the infliction of a hardship upon explorers and others who no doubt find this a very convenient and useful source of fuel' nothing was done in this regard(106).

Because wood alcohol could not be prohibited on account of its indispensability, the Inuit and other native peoples turned to it as a source of beverage alcohol. The RCMP at Bernard Harbour in 1929 reported 'that the natives of Cape Krusenstern and Rymer Point, Victoria Land, during the past winter have taken to drinking wood alcohol. This has the same effect on them as ordinary alcohol or whiskey, rendering them intoxicated and sleepy'(108). The trading companies, when approached on the question, denied that the drinking of wood alcohol or any 'denatured' alcohol was widespread, but admitted that stories had been reported of 'isolated incidents.' For example, the Fur Trade Commissioner of the Hudson's Bay

Company wrote: 'To the best of our knowledge, no reports have been received by us that wood alcohol, in its various forms, is being used as an intoxicant'(109). In fact the Fur Trade Commissioner was 'surprised' that some of these preparations were 'not being used for the purpose intended.' Revillon Frères, the major competitor of the Hudson's Bay Company, used exactly the same words in their communication(110). Hudson's Bay Company records showed that they shipped 225 gallons of wood alcohol and 50 dozen canned heat into the Northwest Territories in 1929; in 1930 the figures were 295 gallons and 45 dozen repectively(109).

But the RCMP, in cotrast to the trading companies, found that at least in the Central Arctic 'the drinking of denatured alcohol and methyl-hydrate by the natives is very prevalent, much to their detriment and health [sic]'(111). This information was obtained from local traders. This was only two years after the traders claimed no knowledge of it. The practice was obviously growing, as was confirmed by the RCMP (Ibid):

> The conscious [sic] of opinion was that the habit started at Rymer Point some years ago, until it has spread along the S. W. Coast of Victoria Land, Prince Alberta [sic] Sound and the past winter to the Minto Inlet natives. This habit has increased considerable [sic] the last three years. Five families from the south moved up to Minto Inlet a year ago and Mr. Rader, the post manager of the Hudson's Bay company [sic] Walker Bay reported that the Minto Inlet natives started drinking this winter for the first time. The natives from the south having introduced the habit.

> The natives on the S. W. Coast of Victoria Land are the worst offenders and it is surprising that there has [sic] not been any Fatalities from drinking this vile stuff. The traders admit it impares [sic] the natives [sic] ability as a hunter and trapper. More important still is the effect it will have on the health of these people. I do not think the habit has spread to the natives in this district and to the east of here.

A Rev Webster, who travelled 'quite a lot amongst the natives', was well aware of the natives' abuse of denatured alcohol and expressed a wish to the RCMP that the matter be placed 'very strongly' before the authorities in Ottawa with a view to having the sale of the products to the Inuit prohibited by legislation (Ibid). Legislation was needed because the traders would not take the initiative on their own through distrust of one another. 'They were afraid that if they did agree not to sell the fuel to the natives, one of their number would refuse to go along and thereby draw the native trade from the respective posts' (Ibid).

The authorities, however, maintained that reports of alcohol consumption were based on hearsay only, although 'there were grounds for suspicion'(112). The Secretary of the Northwest Territories Council said at a meeting in 1932 'that only one instance of the consumption of Wood Alcohol by Eskimos had been reported' and 'there was no record in the Eastern Arctic of Eskimos consuming Wood Alcohol' (Ibid). But the RCMP, and in particular Corporal Wall of Coppermine, insisted that 'there has been no abatement in the abuse by the natives in the drinking of denatured alcohol or methyl

hydrate'[113]. There had in fact been several drinking bouts during the previous winter, one of which ended in a free fight. Even the Hudson's Bay Company District Manager for the Western Arctic was alarmed and was reported to be making representation to Head Office and to Ottawa to ban the importation of denatured alcohol, methyl hydrate, canned heat, etc. into the Northwest Territories (Ibid). There was a general feeling among traders and police that banning these products would in fact cause little hardship to bona fide users of them because Primus stoves could be primed just as easily with gasolene. Two of these traders, G. E. C. Gay and L. T. Rader, when interviewed by the RCMP from Edmonton, both agreed that Inuit drinking of denatured alcohol and methyl hydrate 'had been greatly increased and of late the condition [had] got what one might say deplorable'[114]. In another interview Thomas Lessard, a trapper from Pearce Point, agreed almost word for word with what the traders had said and added that the Inuit now obtained the fuel whenever possible 'for the sole purpose of using it as a drink with no intention of using it for lighting Primus stoves'[115].

Even the Administration was forced to admit by the summer of 1933 'that conditions, particularly in the Victoria Island area, are more serious than what had probably been anticipated' and complete prohibition of the importation of denatured alcohol into the Northwest Territories was being considered[116]. Urgency was now believed to be necessary because the practice of drinking Primus stove primers was spreading. The number of Inuit involved in the territory from

Aklavik eastward to Pearce Point was 'quite large' and the habit appeared to be 'increasing and spreading further to the East among the Kogmolikmiuts of Coronation Gulf'[117]. In March 1934 the Secretary of the Northwest Territories Council read the draft of a letter that was to be sent to all traders warning them that indiscriminate distribution of articles containing alcohol 'which resulted in the demoralization of the native population, would render their trading licences subject to cancellation'[118]. Thus the Northwest Territories placed responsibility on the traders for seeing that the Inuit were not debauched because of any goods obtained from them. The goods included not only denatured alcohol, canned heat, etc., but extracts and essences, toilet articles and medicinal products[119].

> The trader is in the best position to know whether such products will cause intoxication or not, and they should not be sold in sufficient quantities to doubtful persons to permit of an abuse under The Liquor Ordinance. This places the responsibility clearly upon the trader to use very definite discretion in the disposal of preparations known to contain alcohol. Any request for what would appear to be an excessive quantity of any of these articles should be refused and that more particularly if the person effecting the purchase is of part native blood.

By 1951 a government memorandum noted that methyl hydrate, a regular article of stock widely used for starting Primus stoves, was poisonous, but 'there appears very little evidence of the mis-use of this product as an intoxicant'[120]. This

may have been a case of talking too soon. The beginning of construction work on the DEW Line appears to have led to a resurgence of the drinking of methyl alcohol. Ethylene-glycol (antifreeze) was also used. In the ten years from 1955 to 1965 there were thirty cases of death and/or blindness as a result of drinking either of these two products (O. Schaefer: pers. comm.). From 1955 onwards poisoning by methyl alcohol and ethylene-glycol became all of a sudden a major problem responsible for many very costly evacuations yet ending frequently with loss of vision or of life. For example, Dr Ian Black, a Department of National Health and Welfare physician at Aklavik, reported that on 19 August 1955 three Inuit died at a party at Tuktoyaktuk, and the inquest 'established that death in each case was due to poisoning by Methyl Alcohol'(121). One of the survivors of the party said he had started off his evening by drinking two bottles of Listerine followed by two small bottles of perfume and then the wood alcohol. Dr Black went on:

> Apparently various hair dressings and after shave lotions containing ethyl alcohol are commonly drunk by Eskimos and Indians in this region; indeed I have treated a number of natives suffering from injuries sustained while intoxicated whose breath smelled of perfume. Such extracts as vanilla or peppermint in an alcoholic medium are also drunk as was established in two recent court cases in Aklavik. I would therefore support any proposal which might allow the natives of this region either to prepare their own alcoholic beverages from safe and reliable materials, or else allow them to buy liquor through established outlets.

So the use of methylated spirits as an intoxicant continued among certain Inuit groups long after its heyday had ended in the 1940s. Even as late as 1977 a Frobisher Bay man went blind from drinking methyl hydrate(122). The reason for the methylated spirits' loss of favour was that the Inuit around the mid 1940s were, as Dr Black hinted at the end of his letter, turning to home brew.

The home brewing of beer was known among the Inuit of the Western Arctic at least since the early 1920s. At that time Cream of Malt, manufactured by the Canada Malt Extract Company in Toronto, was sold for the purpose of making beer, and a pamphlet issued by the company and sold with the jars of malt extract gave instructions on the method to be used(123). The police made requests to have the sale of Cream of Malt prohibited in the Northwest Territories, but until it was actually used for brewing purposes there was nothing about it that brought it under the scope of the prohibitory clauses of existing legislation. Cream of Malt had legitimate uses as a food and, more to the point, was not intoxicating. 'It is perfectly obvious, however,' wrote government solicitor K. R. Daly in 1923, 'that if importations of such a product are permitted the real intent of any temperance legislation will be absolutely nullified'(124).

But it was not till the immediate post-war years that home-brewing came to be recognized as a social problem. Perhaps the impetus came from the influx of Canadian and United States forces personnel and from the more settled ways of life of many Inuit who were beginning to work in full-time

employment at northern military bases. The facilities for home-brewing were more easily acquired and conveniently stored. The major centre of home-brewing in the early days was Aklavik, though it quickly spread to other places in the Western Arctic. By the end of 1947 the problem of home-brewing at Aklavik was considered serious enough by the Inuit themselves for some of them to raise the matter at a meeting with Archdeacon Donald Marsh, the Bishop of the Arctic(125). Their suggestion was that 'the introduction of liquor permits ... would combat the "home brew" situation,' but on being asked 'if they honestly felt that the giving of a restricted amount would enforce restraint against the amount made, the answer was a reluctant "No"' (Ibid). In February 1949 complaints came from the police officer at Kittigazuit 'that excessive brewing has been and is being carried on by Stanton Natives.' Eskimos told him that a visit by the police to Stanton, fifty miles from Baillie Island, 'would go far towards curtailing the brewing'(126). A month later similar complaints were received about Inuit at Tuktoyaktuk. 'Gambling and making home brew amongst the Tuktoyaktuk natives will have to be stamped out,' was the stark message(127). Their general economic situation was 'extremely bad' and was 'aggravated by the natives' improvident ways of life' which seemed 'to be on the increase generally.' The police officer gave it as his opinion 'that in some cases the growing lack of initiative amongst some Eskimos is due to malnutrition.' By 1951 80 to 90 per cent of the Inuit in the Aklavik area were estimated to be engaged in home-brewing 'from time to time' and the

situation was considered serious since the natives had 'no restraint in the use of alcohol'[128].

The blame for the worsening home-brew situation was placed on the traders, and especially on the independents. 'Independent traders are, generally speaking, unscrupulous, and will stock and sell home brew ingredients to attract trade,' wrote the District Administrator at Fort Smith[129]. 'The Hudson's Bay managers find themselves at a disadvantage, and follow suit to protect themselves.' Sub-Inspector L. A. Denton of Aklavik wrote in 1951[130]:

> It appears that Traders in the North operate strictly along commercial lines and will sell anything from their places of business whether it is in the best interests of the native or not, just so long as there is a large profit.
>
> The sale of Malt Syrup only defeats law enforcement in the Northwest Territories. Reports submitted by our members stationed in the North on Native Conditions, emphasize that the two worst vices they have to contend with among the natives, is sic Brewing and Gambling. The sale of Home Brew material only tends to lower the standard of living and morale of the natives and makes the manufacture of intoxicants that much easier.
>
> The display of these convenient tins of Malt Syrup, with complete instructions for the manufacture of Home Brew contained on the label of each, adds further temptation to the native, and the very fact that we are unable to prevent the sale of Malt to the native, his respect for law enforcement is definitely lowered.

A check on local trading stores in Aklavik on 27 August 1951 revealed that four out of seven stores carried malt extract

and hops and that a fifth store was expecting a shipment on the next boat(131). The managers of the local stores admitted that the main and possibly only use made of malt extract locally was brewing and they all claimed that the reason why they carried it in stock was because the other stores sold it and they had to compete. Most of them stated they would rather not sell malt. 'This may or may not be their true feeling in the matter.' Altogether there were 75 cases or 900 tins of malt extract available for sale in Aklavik, enough to make an estimated 4,500 gallons of home brew. Was it any wonder that so much brewing was done by the natives? the police officer asked, especially as malt was so much more convenient than dried fruits, corn meal and so on (Ibid).

Apart from Aklavik the only other centre where home-brewing became a social problem was Cape Dorset. Here the brewing of beer was taken up by the rebellious young of the 1960s. The Area Administrator at Cape Dorset reported in February 1964(132),

> Activities of the 19-24 years group have been of a more serious nature. Home brewing reached the stage, in the fall of 1962, where it was being fortified with methyl hydrate and sold to other Eskimos. Brewing originated with older Eskimos and was quickly taken up by the younger single group. The Hudson's Bay store was broken into once and money stolen from the till; the Co-operative Bakery was broken into twice and money stolen from the till; the Anglican Mission was broken into several times, and the church collection, food and other articles taken. The lock on the Government warehouse has been forced on at least two occasions and the

> Co-op warehouse and Anglican Mission warehouse broken into once. Government oil, gasolene and kerosene has [sic] been pilfered.

'There is certainly a disposition to break the law among some of the young people here,' wrote the new Area Administrator of Cape Dorset in the summer of 1964, 'but that is incidental to their activities rather than a basis for them. Liquor -- by which I mean beer, methyl hydrate, molasses brew and the like -- is fast becoming a panacea for boredom and discontent among the young people, most of whom have rejected a life on the land for one of loafing miserably around the settlement(133).

Another factor involved in the liquor problem had been mentioned by Canon Colin Montgomery in a radio broadcast in January 1952(134). He blamed the white man in general, not just the trader, and the fact that neither the Treaty Indians nor the Inuit were allowed to drink while the white man was. 'A common result is that the Native will often get hold of liquor somehow or other, or make it himself. He can only drink a very little before becoming intoxicated and then he finds himself in the Police Court for doing what the white man is allowed to do.'

Canon Montgomery appeared to be advocating the same solution as that proposed by the Aklavik Inuit to Archdeacon Marsh in 1947: give the Inuit the legal right to drink. In the summer of 1952 it was decided to ask the Northwest Territories Council about permission for the native people 'to consume intoxicating beverages,' as was being done in British Columbia. This was made public in Commissioner H. A. Young's

opening address to the Council on 2 July 1952 in which he said that the Council would be asked 'to voice an opinion on certain matters not requiring legislation' of which one concerned 'the consumption of intoxicants by Indians and Eskimos'(135). After two years of debate and stalled decisions a report was made to the Governor General in Council(136) pointing out that while Section 95 of the Indian Act provided for granting to Indians the right to consume intoxicants in public places in accordance with provincial laws, the Inuit were excluded from the operation of the Act. But the Commissioner of the Northwest Territories had the power to regulate the consumption of intoxicants by the Inuit living in the Territories. Recognizing that the Indians and the Inuit in the Territories were both manufacturing and consuming intoxicants 'in accordance with habit and custom of many years' standing,' and that it was impossible, except in the immediate vicinity of settlements where there were police detachments, to enforce the existing prohibition against the use of intoxicants, the Council of the Northwest Territories considered it desirable that both Indians and Inuit should be given the legal right to consume liquor in the Territories 'granting them the same privileges in respect of the use of intoxicants as are enjoyed by the other residents of the Territories under the Territorial Liquor Ordinance.' The Governor General was asked to declare by proclamation that the prohibition against the Indians would not apply after 31 May 1955, and in January 1955 the Commissioner would present to the Northwest Territories Council an amendment to the

Territorial Liquor Ordinance 'permitting both Indians and Eskimos in the Territories to possess and consume intoxicants in the same manner as other residents...' But not all Inuit were granted these rights. They were, in fact, restricted to those Inuit who, for eighteen months immediately preceding their application for liquor privileges, had earned their livelihood 'chiefly by means other than hunting and trapping and in other respects... [had] ceased permanently to follow the Eskimo mode of life'(137). In other words, the only way the Inuit were to be allowed to drink legally like white men was to become culturally like white men.

The suggestion that drinking among the Inuit should be legalized appears to have originated among the native people in Aklavik. That other native communities were in favour of it is not indicated in any records. Schaefer (pers. comm.) claims emphatically that by the beginning of the 1950s the great majority of Canadian Inuit had 'no living tradition of alcohol consumption derived from Whaling days and no growing desire for it.' The major exception was the Western Arctic. The decision to legalize drinking was taken by the white administration in the Arctic, apparently in response to the home-brew situation in the Mackenzie Delta. Similarly the opening of liquor outlets and drinking establishments in both the Eastern and the Western Arctic and the legalizing of shipments into various settlements was decreed by government edict without any public enquiry, and in a number of well-known instances forced upon the settlements against the expressed wishes of the majority of the local Inuit (Ibid). Even in the

Mackenzie Delta there was at no time a clear majority of Inuit in favour of the various steps introduced to legalize and ease the acquisition of liquor by the native people. In the late 1960s public demand began to grow for total or at least local prohibition. When Dr Otto Schaefer discussed this question at a public meeting in Yellowknife, the Assistant Commissioner of the Northwest Territories informed him that there could be only one law for all the citizens of the Territories and that there was no possibility for local options such as existed at that time, for example, at Point Barrow in Alaska.

The tragedy of the situation was that whereas the drinking of home brew had been confined to local areas, mostly within the Mackenzie Delta, the legaslization of drinking spread the consumption of alcohol right across the Arctic and caused much more severe problems than those the measure was designed to prevent. In a personal letter to the author Dr Schaefer wrote:

> The Mackenzie Delta was the only area where a continuous tradition of drinking from Whaling days existed to a quite limited degree and created some problems which, however, were minute compared to the disastrous situation following on the heels of the "cure" for this, namely to grant... [the Inuit] the legal right to drink, which the government had allegedly "no choice but to grant." Anyone who lived and worked in different areas of the Arctic in the early and mid-1950ies as I did, and kept returning to it since, and even more so all knowledgeable natives one discusses alcoholic problems with, will attest to the untruth of this statement which indeed almost completely perverts the true historical situation.

Abuse of alcohol, both home-brew and that obtained legally through liquor outlets established in the major population centres in the Northwest Territories, became the most important social issue in the North in the 1960s. In many of these centres 'crime could be directly related to the abuse of alcohol'(138). The group affected by the problem of alcohol varied with communities but was most often the twenty to thirty years age-group. Observers agreed 'that the Eskimos recognized alcohol as a problem, but the Eskimos apparently were unable to exercise sufficient will-power and self-control to solve it' (Ibid). By 1970 the Northern Health Services were concerned enough to include a section on alcoholism in their annual report:

> This is an increasing problem in the Territories and while in many respects it is a social problem the effect on our mortality and morbidity statistics is so great that it is also a major health problem which is increasing in importance every year. 40-50% of deaths due to violence and accidents are also due to this cause. A fair percentage of our morbidity in infants and children is related to alcohol problems in families with subsequent neglect of children, but this is very difficult to prove.
>
> (Canada, Dept. Nat. Health and Welf. 1970).

In December 1973 the Frobisher Bay newspaper Inukshuk published an editorial which quoted from a report on alcohol abuse presented to and accepted unanimously by the Northwest Territories Council(139). The report pointed out that there was no doubt in the minds of most of the interviewees about

the many alcohol-related problems in the North 'and especially the devastation of the native peoples.' It referred to the high rate of accidental death already noted by the health authorities and to the fact that alcohol-related offences averaged 95 per cent in the Yellowknife Correctional Centre. Law enforcement people had the impression 'that their work would be decreased by 75 per cent if it were not for the abuse of alcohol.' Welfare personnel considered 'that 98 per cent of child neglect cases were directly correlated' with alcohol abuse.

Children themselves were being exposed to drinking behaviour by a change in the adult pattern of that behaviour whereby, in the early 1960s, more Inuit were observed to be drinking in their own homes rather than in public places(140). A very high proportion of total income was being spent on liquor and the inference has been that the money thus spent was being diverted from essential food purchases, with subsequent harmful effects on the well-being of the family and in particular of the children. For example, a welfare report from Frobisher Bay stated that many families suffered from a shortage of food, clothing and other necessities because one or both parents were spending almost all their income on beer(141). However, after the opening of the liquor store in Frobisher Bay in September 1961 the Hudson's Bay Company there reported a drop in sales of clothing and small luxury articles but noted that the sale of food remained consistent(140).

A number of factors have been suggested as causing

excessive drinking among the Inuit. Dr J. S. Willis of Indian and Northern Health Services believed that drinking was an indication of status seeking[142]. The Inuit felt that they had achieved equality with the whites while they were in the environment of a bar and being waited on like the whites. 'This was in direct contrast to the shack-town conditions in which...[they] lived.' The tendency of Inuit to do more of their drinking at home[140] might argue somewhat against this. V. F. Valentine, chief of the Northern Co-ordination and Research Centre, thought that drinking problems had arisen not so much as a result of social inequality or repression -- for if this were true the American Blacks should have the same problems as the Inuit and this was not the case -- but that they were due to the breakdown of Inuit society. 'Excessive drinking was a symptom of their culture having been fractured'[142]. H. Zukerman, the Superintendent of Welfare for the Frobisher Bay region put it this way[141],

> It is generally agreed that excessive drinking is caused by the person's insecurity, an unsatisfactory environment, and the problems in his relationship with others about him. It has been said that the Eskimos drink excessively because they are losing their familiar way of living and now have to adapt to the white man's way of life. He drinks to escape the pressures which have been put on him and with which he is unable to cope adequately. Liquor is an escape from the reality of the world in which he is expected to adapt himself and it is a recreation to take the place of the enjoyments and excitements he had when he was a hunter.
>
> If excessive drinking is the effect the

> the changing environment has on the Eskimo people, it is also the cause of the many problems while they are trying to adapt themselves to a new culture and it is seriously hindering their change over from their primitive way of life to living in a more complicated society.

There is no doubt that the Inuit themselves recognized the seriousness of the drinking problem in the Arctic, but it is not true, as some concerned government advisers put it, that they were unable to exercise sufficient will-power and self-control to solve it. In fact the native organizations and councils brought increased pressure to bear on the government while medical personnel continued to goad the authorities into taking some action. This verbal prodding, together with the pressure of tragic incidents and increasing rates of crime, morbidity and death, forced the Northwest Territories government eventually into reassessing their policy and to instigate the necessary changes in legislation that made it possible for the first time for each settlement to set its own liquor policy. In August 1976 Rae-Edzo in the Mackenzie became the first Canadian community in decades to impose a total ban on alcohol(143). Thereafter Indian and Inuit settlements across the Arctic voted on the prohibition or rationing of alcohol. In Frobisher Bay, for instance, a petition from three hundred citizens brought about the closing of the government liquor store, and in Pond Inlet a rationing system was established. As Nancy Cooper reported in January 1977(144),

> The initial result, by any measure, have been impressive. In Frobisher, for example, RCMP Staff Sergeant Dick Vitt says every liquor-related crime in the book has dropped off substantially. The local jail's "drunk tank" is virtually empty and the Baffin Correctional Centre, usually overflowing with Frobisher prisoners, is only half full. School principal Lynn Nash says school attendance in Frobisher has zoomed, fights among students have stopped and no longer does he see kids coming to school beaten or exhausted. Adds Nash: "In the library now rarely do we see a kid dozing on the floor. We used to have a dozen kids hiding in the book stacks having a sleep because they were kept up all night by drinking and fighting adults.

2.9 Notes and references

(1) Extracts from Dr Otto Schaefer's paper entitled 'Native Food Resources' were published in The Drum, 17 July 1975, p. 13.

(2) Medical Report for the year ending 31 August 1936: Dr A. G. MacKinnon, Medical Officer, Pangnirtung (RG85, Vol. 815, File 6954, Pt. 3).

(3) Memo from B. G. Sivertz, Chief, Arctic Division, to J. R. Beaton, Medical Section, Defence Research Board, d. 30 May 1955 (RG85, Vol. 480, File 251-1-2, Pt. 3).

(4) Letter from V. Stefansson to S. T. Wood, Commissioner of the RCMP, Ottawa, d. 10 April 1938 (RG85, Vol. 883, File 9134).

(5) Letter from Dr L. D. Livingstone to R. A. Gibson, Director, Lands, Parks and Forests, Department of Mines and Resources, d. 15 May 1937 (RG85, Vol. 883, File 9134).

(6) Letter from Dr R. Miller, Director of Medical Services, Department of Pensions and National Health, to R. A. Gibson, Director, Lands, Parks and Forests, Department of Mines and Resources, d. 5 June 1937 (RG85, Vol. 883, File 9134).

(7) Letter from Sgt. E. S. Covell, Officer in Charge,

Aklavik Detachment, RCMP, to Officer Commanding, 'G' Division, RCMP, Ottawa, d. 15 October 1937 (RG85, Vol. 883, File 9134).

(8) Letter from L/Cpl. W. D. Cain, Officer in Charge, Cambridge Bay Detachment, RCMP, to Officer Commanding, Western Arctic Sub-Division, RCMP, Aklavik, d. 15 June 1938 (RG85, Vol. 883, File 9134).

(9) Letter from C. D. LaNauze, Officer Commanding, 'A' Division, RCMP, to the Commissioner, RCMP, Ottawa, d. 19 April 1938 (RG85, Vol. 883, File 9134).

(10) Letter from T. B. Caulkin, Officer Commanding, 'G' Division, RCMP, to the Commissioner, RCMP, Ottawa, d. 21 April 1938 (RG85, Vol. 883, File 9134).

(11) Letter from Dr D. D. Wilson, Chief Dental Officer, Department of Pensions and National Health, to Dr R. Miller, Director of Medical Services, Department of Pensions and National Health, d. 12 May 1938 (RG85, Vol. 883, File 9134).

(12) Letter from L/Cpl. E. E. Muffitt, Officer in Charge, Pangnirtung Detachment, RCMP, to Officer Commanding, 'G' Division, RCMP, Ottawa, d. 26 July 1938 (RG85, Vol. 883, File 9134).

(13) Report from D. Jenness, Ethnologist, Canadian Arctic Expedition, to the Commissioner, RNWP, Regina, re Central or Copper Eskimos, d. 18 July 1916 (RG85, Vol. 571, File 244, Pt. 1).

(14) Memo from J. G. Wright, Chief, Northern Administration Division, re Fur Trade in the Canadian Arctic, d. 23 September 1949 (RG85, Vol. 1036, File 20696, Pt. 1).

(15) Memo from J. Cantley, Arctic Services, to J. G. Wright, Chief, Northern Administration Division, d. 20 November 1951 (RG85, Vol. 1069, File 251-1A, Pt. 1).

(16) RCMP Patrol Report: Pond Inlet to Arctic Bay and return, 26 February to 12 March 1934. RCMP Headquarters , Historiad Section, Ottawa.

(17) RCMP Patrol Report: Lake Harbour to Loks Land and Frobisher Bay, 3 to 14 September 1935. RCMP Headquarters, Historiad Section, Ottawa.

(18) RCMP Patrol Report: Pangnirtung to southeast Baffin Island, 14 February to 15 April 1927. RCMP Headquarters, Historiad Section, Ottawa.

(19) Memo from Dr L. D. Livingstone to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 14 November 1927 (RG85, Vol. 815, File 6954, Pt. 1).

(20) Memo from L. T. Burwash, Exploratory Engineer, to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 28 November 1927 (RG85, Vol. 781, File 5867).

(21) Letter from W. W. Cory, Commissioner of the Northwest Territories, to C. Sale, Governor, Hudson's Bay Company, d. 28 December 1927 (RG85, Vol. 1130, File 254-1, Pt. 1).

(22) Letter from R. A. Gibson, Deputy Commissioner of the Northwest Territories, to Dr G. D. W. Cameron, Deputy Minister of National Health and Welfare, d. 16 January 1947 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(23) RCMP Patrol Report: Lake Harbour to Frobisher Bay and return, 4 to 23 February 1931. RCMP Headquarters, Historiad Section, Ottawa.

(24) Medical Report for the year ending 31 August 1934: Dr J. A. Bildfell, Medical Officer, Pangnirtung (RG85, Vol. 815, File 6954, Pt. 2).

(25) Article entitled 'The Eastern Arctic Patrol', prepared for publication by S. J. Bailey, Area Administrator, Great Whale River, 1949 (RG85, Vol. 1037, File 20757).

(26) Price list of goods supplied by stores in the Northwest Territories for winter 1931-32 and spring 1932 (RG85, Vol. 839, File 7537, Pt. 1).

(27) Price list of goods supplied by stores in the Northwest Territories, 1934 (RG85, Vol. 839, File 7537, Pt. 1).

(28) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to Dr L. B. Pett, Director, Nutrition Services, Department of Pensions and National Health, d. 10 February 1944 (RG85, Vol. 827, File 7242).

(29) A study of food habits and supplies in the Northwest Territories: Winifred Hinton, Nutrition Services, Department of Pensions and National Health, February 1944 (RG85, Vol. 98, File 252-1-2, Pt. 1).

(30) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to Dr F. F. Tisdall, Chairman,

Committee on Nutrition, Canadian Medical Association, d. 27 March 1942 (RG85, Vol. 827, File 7242).

(31) Summary tabulation form for dietary data: statistics collected by P. F. Jordan at Chantrey Inlet, Spence Bay, for Departmrnt of National Health and Welfare, Radiation Protection Division, 1963 (RG85, Vol. 1658, File NR2/3-59, Pt. 1).

(32) A general report on economic and health conditions of Cumberland Sound natives: Dr T. J. Orford, Medical Officer, Pangnirtung, d. 1 September 1938 (RG85, Vol. 815, File 6954, Pt. 3).

(33) Report on Nutritional Investigation, Northwest Territories Council: Cpl. L. F. Willan, RCMP, Coppermine, d. 27 December 1943 (RG85, Vol. 98, File 252-1-2, Pt. 1).

(34) Memo from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 14 March 1942 (RG85, Vol. 815, File 6954, Pt. 3).

(35) Letter from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to Col. C. Starnes, Commissioner, RCMP, Ottawa, d. 21 June 1928 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(36) Letter from Staff Sgt. M. A. Joyce, RCMP, Chesterfield Inlet, to Officer Commanding, RCMP, Headquarters Division, Ottawa, d. 28 April 1932 (RG85, Vol. 781, File 5901).

(37) Memo for Mr A. Brabant, Fur Trade Commissioner, Hudson's Bay Company, respecting his conference with the Advisory Board on Wildlife Protection, held on 12 November 1925 (RG85, Vol. 1679, File 405-5-1, Pt. 1).

(38) Letter from L. Budgell, Manager, Hudson's Bay Company Post, Wolstenholme, to the Department of Mines and Resources, d. 31 May 1943 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(39) Minutes of meeting held 8 October 1946 to hear verbal reports of various medical officers recently returned from the Arctic (RG85, Vol. 1069, File 251-1, Pt. 1).

(40) Nunatsiaq News, 14 July 1977, p. 19.

(41) Eastern Arctic Patrol, 1955: Preliminary report of the medical party by Dr J. S. Willis, Chief Medical Officer, d. 22 July 1955 (RG85, Vol. 1903, File 1009-13, Pt. 1).

(42) Memorandum for file re Teeth: Dr L. D. Livingstone, Medical Officer, Bureau of Northwest Territories and Yukon Affairs, d. 16 May 1938 (RG85, Vol. 883, File 9134).

(43) General medical report for the year September 1940 to September 1941: Dr J. A. Bildfell, Medical Officer, Pangnirtung (RG85, Vol. 815, File 6954, Pt. 3).

(44) Draft of paper on 'Better Bannock' by Margaret Lock and L. B. Pett, Nutrition Division, Department of National Health and Welfare, July 1952 (RG85, Vol. 480, File 252-1-2, Pt. 3).

(45) Memo from J. G. Wright, Bureau of Northwest Territories and Yukon Affairs, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 6 February 1947 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(46) Letter from Dr F. G. Banting, University of Toronto, to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 14 September 1927 (RG85, Vol. 1130, File 254-1, Pt. 1).

(47) Report of medical affairs and native welfare, July and August 1940: Dr J. Melling, Medical Officer, Chesterfield Inlet (RG85, Vol. 855, File 8012, Pt. 1).

(48) Letter from Dr J. P. Harvey, Medical Officer, Aklavik, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 8 February 1948 (RG85, Vol. 98, File 251-1-2, Pt. 2).

(49) Report on Fort Chimo, Quebec, March 1954: Alma Houston, Arctic Services (RG85, Vol. 480, File 252-1-2, Pt. 3).

(50) Letter from Dr L. B. Pett, Chief, Nutrition Division, Department of National Health and Welfare, to Dr P. E. Moore, Director, Indian Health Services, d. 8 December 1954 (RG85, Vol. 480, File 252-1-2, Pt. 3).

(51) Letter from J. D. Soper, Northwest Territories and Yukon Branch, to F. A. Teskey, Manager, Paulin Chambers Company, Winnipeg, d. 22 September 1931 (RG85, Vol. 827, File 7242).

(52) Letter from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to C. H. French, Fur Trade Commissioner, Hudson's Bay Company, d. 22 June 1928 (RG85, Vol. 827, File 7242).

(53) Memo from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A Gibson, Deputy Commissioner, Northwest Territories, d. 7 February 1944 (RG85, Vol. 827, File 7242).

(54) Letter from Dr L. B. Pett, Director, Nutrition Services, Department of National Health and Welfare, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 22 February 1944 (RG85, Vol. 827, File 7242).

(55) Report on medical services rendered at Chesterfield during three months ending 31 December 1944: Dr N. R. Rawson, Medical Officer (RG85, Vol. 855, File 8012, Pt. 2).

(56) Memorandum for file signed by J. F. Doyle, d. 10 May 1935 (RG85, Vol. 876, File 8842).

(57) Letter from Dr A. G. MacKinnon, Medical Officer, Pangnirtung, to J. L. Turner, Director, Lands Division, Northwest Territories and Yukon Branch, d. 31 October 1936 (RG85, Vol. 876, File 8842).

(58) Memo from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A Gibson, Deputy Commissioner, Northwest Territories, d. 24 November 1941 (RG85, Vol. 815, File 6954, Pt. 3).

(59) Memo from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 18 February 1942 (RG85, Vol. 815, File 6954, Pt. 3).

(60) Memorandum for Major D. L. McKeand, signed by J. F. Doyle, d. 5 March 1942 (RG85, Vol. 815, File 6954, Pt. 3).

(61) Booklet prepared for wives of Eskimo employees on the Dew Line, 1961 (RG85, Vol. 684, File A680-1-14, Pt. 2).

(62) Report on Homemaking Classes conducted at Fox Main Dew Line Station for the Wives of Federal Electric Eskimo Employees, 5 to 19 July 1961: E. J. MacKinnon, Home Economist (RG85, Vol. 684, File A680-1-14, Pt. 2),

(63) Northern Service Officer's Monthly Report, Tuktuyaktuk, September 1958: E. J. Saunders (RG85, Vol. 1275, File 205-4/120, Pt. 6).

(64) Memo from Anne Berndtsson, Community Principal, Cape Dorset, d. 20 October 1961 (RG85, Vol. 684, File A680-1-14, Pt. 2).

(65) Memo from B. G. Sivertz, Director, Northern Administration and Lands Branch, to Deputy Minister of Northern Affairs and National Resources, d. 19 May 1958 (RG85, Vol. 1069, File 251-1, Pt. 6).

(66) Memo from W. P. Farley to the Administrator of the Arctic, d. 25 September 1959 (RG85, Vol. 1275, File 205-4/120, Pt. 6).

(67) Memo from W. Rudnicki, Chief, Welfare Division, Department of Northern Affairs and National Resources, d. 8 December 1960 (RG85, Vol. 480, File 251-1-2, Pt. 3).

(68) Letter from P. A. C. Nichols, Manager, Arctic Division, Hudson's Bay Company, to B. Thorsteinsson, Northern Administration Branch, d. 6 January 1961 (RG85, Vol. 501, File 680-1-14, Pt. 2).

(69) Letter from Jean Briggs, Gjoahaven, to M. F. J. Laskie, Northern Co-ordination and Research Centre, d. 16 November 1963 (RG85, Vol. 1658, File NR2/3-59, Pt. 1).

(70) RCMP Report re Conditions Amongst Eskimos Generally: Lake Harbour Detachment, d. 27 April 1958 (RG85, Vol. 1349, File 1000/167, Pt 5).

(71) Memo from J. G. Wright, Acting Chief, Arctic Division, to G. E. B. Sinclair, Director, Northern Administration and Lands Branch, d. 9 October 1951 (RG85, Vol. 1069, File 251-1, Pt. 1A).

(72) 'Relief of Destitute Eskimos': Amendment No. 14 to the Consolidation of Instructions concerning Eskimo Affairs, Ottawa, d. 22 April 1953 (RG85, Vol. 480, File 251-1-2, Pt. 3).

(73) Minutes of a meeting on rations for Eskimos, Vimy Building, Ottawa, 25 October 1955 (RG85, Vol. 480, File 251-1-2, Pt, 3).

(74) Accounts of supplies furnished by Hudson's Bay Company to sick and destitute Eskimos, June 1924 to March 1925 (RG85, Vol. 815, File 6954, Pt. 1).

(75) RCMP Report re Conditions Amongst Eskimos Generally: Pangnirtung Detachment, d. 30 June 1929 (RG85, Vol. 815, File 6954, Pt. 1).

(76) Letter from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to C. H. French, Fur Trade Commissioner, Hudson's Bay Company, d. 22 June 1928 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(77) Letter from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to W. W. Cory, Deputy Minister of the Interior, d. 25 June 1928 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(78) Report of tour of inspection, Central Arctic region, March-April 1956: J. P. Richards, Arctic Division (RG85, Vol. 1275, File 201-1, Pt. 34).

(79) Report from Sgt. H. A. McBeth, RCMP, Baker Lake, re Kabloonak, Eskimo, Back River, forwarded 1 April 1940 (RG85, Vol. 920, File 11408).

(80) Report from Const. H. H. MacLeod, RCMP, Baker Lake, re Kabloonak, Eskimo, Back River, d. 25 March 1940 (RG85, Vol. 920, File 11408).

(81) Report from Sgt. H. A. McBeth, RCMP, Baker Lake, re Amarrok, Eskimo, Schulze Lake, d. 31 May 1940 (RG85, Vol. 920, File 11409).

(82) Report from Const. H. O. Humphrey, RCMP, Eskimo Point, re Anarowa, Destitute Eskimo, Eskimo Point, d. 13 July 1940 (RG85, Vol. 920, File 11410).

(83) Invoice from Hudson's Bay Company, Chesterfield Post, for relief supplies issued to native "Charlie", d. 31 July 1940).

(84) General Report for the year 1941-42: Dr J. A. Bildfell, Medical Officer, Pangnirtung. n.d. (RG85, Vol. 815, File 6954, Pt. 3).

(85) List of rations supplied to destitute widows in the Northwest Territories: Dr H. W. Lewis, Department of National Health and Welfare, d. 24 March 1947 (RG85, Vol. 98, File 252-1-2, Pt. 1).

(86) Letter from Dr P. E. Moore, Director, Indian Health Services, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 12 April 1947 (RG85, Vol. 98, File 252-1-2, Pt. 1).

(87) Welfare Report, Aklavik: P. B. Gorlick, Welfare Officer, d. 19 March 1957 (RG85, Vol. 1264, File 1000/119, Pt. 7).

(88) Memo from J. G. Wright, Chief, Arctic Division, to Dr D. Leechman, National Museum of Canada, d. 27 November 1950 (RG85, Vol. 990, File 15583).

(89) Policy Circular: Issue of Milk and Pablum on Family Allowances Credits [1948] (RG85, Vol. 480, File

(90) RCMP Patrol Report: Lake Harbour to Cape Dorset and return, 25 March to 14 April 1949. RCMP Headquarters, Historiad Section, Ottawa.

(91) 'One cannot help but smile,' writes Dr Schaefer (pers. comm.), 'about the claimed observation of improved children's health and greater resistance to diseases reported [in] 1949 vs. 1946 [and] attributed to more milk consumption.'

(92) Extract from report by S. J. Bailey, Eastern Arctic Patrol, Chesterfield Inlet, d. 27 July 1948 (RG85, Vol. 98, File 251-1-2, Pt. 2).

(93) The 1948 authorized list of goods included the following food items: milk: dried, whole or evaporated, but not sweetened or condensed; pablum (for children up to seven years of age) or other approved baby cereal; flour: Canada Approved, Vitamin B only (limited); rolled oats and oatmeal; sea biscuits (limited); corn syrup and molasses; marmalade or jam; eggs: fresh or Grade A dried in powdered form (Canadian product); canned or fresh meat (issued only when game is scarce); baking powder and lard (for families receiving relief assistance only); peanut butter; cheese; fruit: fresh, dried or juices; canned tomatoes and tomatoe juice; green or dehydrated vegetables; rice and beans; salt; cocoa.

(94) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to R. H. Chesshire, Manager, Fur Trade Department, Hudson's Bay Company, d. 9 February 1949 (RG85, Vol. 98, File 251-1-2, Pt. 2).

(95) Eastern Arctic Patrol Report, 1950: R. E. G. Johnston, Northern Administration Branch (RG85, Vol. 1127, File 201-1-8, Pt. 2A).

(96) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to J. J. Honigmann, Assistant Professor of Anthropology, New York University, d. 30 September 1949 (RG85, Vol. 990, File 15583).

(97) Dr J. S. Willis, Chief Medical Officer on the Eastern Arctic Patrol in 1955, wrote, for example: 'Chewing gum is passed from mouth to mouth and a cigarette passed around the family circle when tobacco is in short supply. The mothers chew food for the infants. Tb is thus shared by all.' See Ref. (41) above.

(98) Letter from C. C. Chipman, Commissioner of the Hudson's Bay Company, to Col. F. White, Commissioner, Northwest Territories, d. 23 February 1909 (RG85, Vol. 571, File 231, Pt. 1).

(99) Letter from Col. F. White, Commissioner, Northwest Territories, to C. C. Chipman, Commissioner of the Hudson's Bay Company, d. 27 February 1909 (RG85, Vol. 571, File 231, pt. 1).

(100) Crime report re C. H. Clarke -- supplying liquor to Eskimo woman: Insp. S. T. Wood, RNWMP, Herschel Island, d. 3 November 1919 (RG85, Vol. 569, File 96).

(101) Memo from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to W. W. Cory, Deputy Minister of the Interior, d. 9 November 1928 (RG85, Vol. 569, File 96).

(102) Letter from A. McGill, Chief Analyst, Laboratory of the Inland Revenue Department, to W. J. Gerald, Deputy Minister of Inland Revenue, d. 13 October 1911 (RG85, Vol. 1112, File 590-8, Pt. 1).

(103) Report of Analysis: S. E. Wright, Assistant Chemist, d. 17 October 1923 (RG85, Vol. 1112, File 590-8, Pt. 1).

(104) Letter from Insp. G. F. Fletcher, Officer Commanding, Great Slave Lake Sub-Division, RCMP, to Officer Commanding, 'G' Division, Ottawa, d. 14 February 1924 (RG85, Vol. 1112, File 590-8, Pt. 1).

(105) Minutes of the Forty-first Session of the Northwest Territories Council, 8 March 1933 (RG85, Vol. 1112, File 590-8, Pt. 1).

(106) Memo from the Chief Dominion Analyst re Canned Heat, d. 8 April 1927 (RG85, Vol. 1112, File 590-8, Pt. 1).

(107) Memo for W. W. Cory, Deputy Minister of the Interior (unsigned) d. 25 April 1927 (RG85, Vol. 1112, File 590-8, Pt. 1).

(108) Letter from Const. S. Wild, Officer Commanding, Bernard Harbour Detachment, RCMP, to Officer Commanding, Western Arctic Sub-District, RCMP,

Herschel Island, d. 21 August 1929 (RG85, Vol. 1112, File 590-8, Pt. 1).

(109) Letter from C. H. French, Fur Trade Commissioner, Hudson's Bay Company, to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 20 June 1920 (RG85, Vol. 1112, File 590-8, Pt. 1).

(110) Letter from Revillon Frères to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 12 May 1930 (RG85, Vol. 1112, File 590-8, Pt. 1).

(111) Report from Cpl. G. M. Wall, Officer Commanding, Coppermine Detachment, RCMP, to Officer Commanding, Western Arctic Sub-District, RCMP, Aklavik, d. 12 April 1932 (RG85, Vol. 1112, File 590-8, Pt. 1).

(112) Minutes of the Fortieth Session of the Northwest Territories Council, 28 September 1932 (RG85, Vol. 1112, File 590-8, Pt. 1).

(113) Report from Cpl. G. M. Wall, Officer Commanding, Coppermine Detachment, RCMP, to Officer Commanding, Aklavik Sub-Division, d. 10 June 1933 (RG85, Vol. 1112, File 590-8, Pt. 1).

(114) Report from Cpl. A. Fielding, RCMP, Edmonton, to Officer Commanding, 'G' Division, Edmonton, d. 8 July 1933 (RG85, Vol. 1112, File 590-8, Pt. 1).

(115) Report from Cpl. A. Fielding, RCMP, Edmonton, to Officer Commanding, 'G' Division, Edmonton, d. 10 July 1933 (RG85, Vol. 1112, File 590-8, Pt. 1).

(116) Memo from H. E. Hume, Chairman, Dominion Lands Board, to H. H. Rowatt, Deputy Minister of the Interior, d. 20 July 1933 (RG85, Vol. 1112, File 590-8, Pt.1).

(117) Report from Cpl. T. H. Tredgold, Officer Commanding, Depot Division, RCMP, Regina, to the Commissioner, RCMP, Ottawa, d. 16 October 1933 (RG85, Vol. 1112, File 590-8, Pt. 1).

(118) Minutes of the Fifty-first Session of the Northwest Territories Council, 15 March 1934 (RG85, Vol. 1112, File 590-8, Pt. 1).

(119) Letter from Dr. J. A Urquhart, Acting District Agent, to T. Scurfield, Post Manager, Hudson's Bay Company, Yellowknife, d. 14 May 1941 (RG85, Vol. 1112, File 590-8, Pt. 1).

(120) Memorandum on file, signed by T. Clifford, d. 18 September 1951 (RG85, Vol. 1112, File 590-8, Pt. 1).

(121) Letter from Dr I. Black, Department of National Health and Welfare, Aklavik, to F. J. G. Cunningham, Deputy Commissioner, Northwest Territories, d. 14 November 1955 (RG85, Vol. 1112, File 590-8, Pt. 1).

(122) Nunatsiaq News, 14 July 1977, p. 2.

(123) Letter from Insp. J. F. Fletcher, Officer Commanding, Great Slave Lake Sub-Division, RCMP, to Officer Commanding, 'G' Division, Ottawa, d. 14 February 1923 (RG85, Vol. 1112, File 590-8, Pt. 1).

(124) Memo from K. R. Daly, Departmental Solicitor, to O. S. Finnie, Director, Northwest Territories and Yukon Branch, d. 20 August 1923 (RG85, Vol. 1112, File 590-8, Pt. 1).

(125) Letter from Archdeacon D. B. Marsh, Bishop of the Arctic, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 1 December 1947 (RG85, Vol. 1112, File 590-8, Pt. 2).

(126) Extract from correspondence: Const. H. R. Wilmot, RCMP, Kittigazuit, d. 17 February 1949 (RG85, Vol. 1112, File 590-8, Pt. 2).

(127) RCMP Report re Conditions of Natives at Port Brabant, N. W. T.: Insp. J. A. Peacock, Officer Commanding, Criminal Investigation Branch, d. 7 March 1949 (RG85, Vol. 1112, File 590-8, Pt. 2).

(128) Memo from P. B. Parker, Acting District Administrator, Aklavik, d. 24 June 1951 (RG85, Vol. 1112, File 590-8, Pt. 2).

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CHAPTER THREE

TECHNOLOGICAL FACTORS

3.1 Introduction

Man's exploitation of his environment for the energy and material resources needed to sustain life is accomplished with the aid of a wide and ever widening array of artifacts: 'the material means by which man contrives to influence the course of natural events and make them serve his wants, the artificial element in nature that makes man ecologically unique' (Wagner 1960:94). This artificial element, embracing everything manufactured by man, makes up man's technological adaptation to the environment.

All accounts of the Inuit have stressed their technological ingenuity in adapting to the stern environment of the Arctic. As Peter Farb (1968:57) puts it, for example, 'the material culture of the Eskimo shows a more complex development than that of any other primitive people living on such a simple level as the family. They are operating at very nearly one hundred per cent of the potential of the environment.' He refers to the igloo as the best possible structure that can be built with the materials available and mentions the dog sled, the kayak, the tailored clothes with the seams sewn so as to be waterprood, the slit goggles made from ivory to protect the eyes against blinding sun reflected

from the snow. Deprived of wood for heating and light, the Inuit invented the stone lamp that burns seal oil and is relatively low in smoke. 'An inventory of Eskimo technology,' Farb comments (Ibid:59), 'could be extended for pages and chapters.' Farb's response to Inuit technology is typical of all anthropological writing on the subject.

Protected against the elements by caribou- and seal-skin clothes, the Inuit used specialized hunting weapons, like the harpoon, to bring home seals and caribou and fish to skin tent or snow-built house, lighted and heated by seal-oil soapstone lamps. This is the well-known, perhaps idealized, picture of the Inuit way of life. This was adaptation to environment of an almost perfect text-book variety. But like every other aspect of traditional Inuit culture it changed as a result of contact with outside influences. A whole new range of artifacts from the material culture of Europe and North America entered the arctic eco-system. Many of them had a direct impact on the food habits of the Inuit.

3.2 Firearms

Firearms were first introduced to the Inuit around the middle of the nineteenth century. Boas (1888:58) wrote that as soon as the whalers began to winter in Cumberland Sound and to employ the Inuit, the latter received firearms and European boats in exchange for their wares. That was in the early 1850s. When the Inuit became acquainted with the

advantages of firearms they began to trade bearskins for guns and ammunition, having learned how highly bearskins were prized by the whalemen of the Davis Straits fishery (Ibid: 59). Firearms reached the Western Arctic at about the same time. Foote (1964:17) reckons that rifles did not reach northwestern arctic Alaska till about 1848 and then spread slowly eastwards. It is likely that they did not appear in the Canadian Western Arctic till the 1860s.

Once the rifle was known to the Inuit they mastered it and quickly adapted it to their hunting behaviour. By as early as 1903 in the Eastern Arctic they had 'quite given up their primitive weapons' (Low 1906:271), and Low believed that 'a withdrawal of the whalers would lead to great hardship and many deaths...if the Government did not in some manner take their place and supply the Eskimos with the necessary guns and ammunition.' So necessary were firearms to the Inuit that they would starve without them, for the old ways of hunting by patient waiting or stalking at breathing holes or at basking sites were quickly lost. There are many reports like that from Steensby Peninsula on the northeast arctic coast in 1929. The RCMP described two families camping there as 'very poor' because they 'had little ammunition with which to go south to Shimik Island, where there is open water and seals, and so were forced to hunt seals primitively through the ice at which they had only been moderately successful'[(1)]. In 1945 a worse situation arose at a number of camps in Cumberland Sound where almost all the dogs, 30 out of 33 at one camp, died from starvation and

the people nearly followed them(2). The RCMP officer who brought relief to the camps at the end of February explained:

> It was learned through the interpreter that these Natives had depleted their supply of ammunition about the middle of January and from this time on were unable to hunt seal which is their staple food, and also light and fuel supply. They existed on what small game they caught in their traps, and what scraps they could salvage, and before help arrived they were eating their skin boots. The Natives stated that they could not have existed another week under such conditions.

In many ways the Inuit were themselves to blame. They squandered their money on 'tea, white flour, luxuries, biscuits, etc.,' wrote Dr Bildfell, the Medical Officer at Pangnirtung, in 1941, 'and left not enough for ammunition'(3). A survey which Dr Bildfell and the RCMP carried out revealed that by far the greater number of guns in Cumberland Sound were inaccurate and inefficient and hence wasteful of ammunition. Furthermore a large number of Inuit were entirely without any hunting equipment, or at the most a dilapidated .22, and nowhere was the supply of ammunition adequate. As Dr Bildfell claimed: 'The native himself is using this fact in making his relief demands and they freely admit that their guns are in poor condition and that they have no ammunition. Consequently surely "it cannot be his fault that he is hungry".' In other words, the Inuit used the poor condition of their firearms as a means of obtaining relief; that is, more supplies of flour, tea and biscuits

whose purchase left them short of ammunition in the first place.

It is not suggested that this practice was widespread, and there is only Dr Bildfell's opinion, often biased against the Inuit, that it was common in Cumberland Sound. In general the Inuit used the power of their firearms to obtain the necessary supplies of country food. It has been said that the use of high-powered rifles in conjunction with well-equipped boats made the Inuit more efficient hunters and contributed to a decline in the numbers of game animals, especially caribou, in many areas. This can be blamed for the plight of the Barren Grounds Inuit and the episodes of starvation amongst them in the 1940s and 1950s. The decline in game animal populations not only caused a reduction in the amount of native food consumed, but again led to a greater dependence on relief rations and thus a greater consumption of carbohydrates. An opposing view is that of Sonnenfeld (1960) who argues in a well-known paper that use of the rifle in hunting meant a greater loss to the hunter of sea-mammals and birds through sinking (see Kemp 1971:110) or through being frightened away by noise or innacurate shooting. The debate on this question, centring on the important distinction between efficiency and effectiveness (Sonnenfeld 1960:172), will no doubt continue, but it seems likely that the use of the rifle together with the rapidly increasing numbers of Inuit and their growing concentration into areas close to settlements did, in fact, bring about a scarcity of food animals in the more populous areas. The use of the rifle on

its own was probably not enough to cause a scarcity of food animals -- traditional hunting methods having been highly effective -- but the combination of the rifle with other factors, especially demographic change (Section 5.3) could have led to such a scarcity.

3.3 Transportation

Ships brought the first white men to the Arctic and instituted those changes that have since transformed every aspect of the cultural system of the Inuit. And every summer since the early part of this century commercially and governmentally owned ships have served the arctic settlements, bringing medical and material supplies and annual rations of foos to the trading posts, police detachments and missions for distribution to the Inuit. The Inuit themselves travelled the open summer water in kayak and uniak. But the kayak was found to be inefficient for hunting with the rifle and gave way to a more open boat fashioned along the lines of the umiak. Whaleboats made their appearance in the 1930s (Damas 1963:24; Kemp 1971:113), their purchase made possible through trading fox- and bear-skins. After the Second World War, more particularly in the 1950s, whaleboats were increasingly fitted with outboard engines and this made possible more efficient open-water hunting. With these acquisitions the total food quest behaviour of the Inuit was altered beyond recognition.

Another technological development in transportation that

greatly affected the food quest was the introduction of the snowmobile or autoboggan in 1961. It is ironic, in view of the now universal use of the snowmobile in place of the traditional dog-sled in the Arctic, that its potential was not at first immediately recognized. 'Quite frankly, autoboggans have not been tried extensively enough in the eastern Arctic to date to enable us to conclude that they are safe and efficient means of transportation,' wrote the Administrator of the Arctic in June 1962(4). They were then being used 'with some success' in the Western Arctic and eventually proved themselves everywhere in the North. By 1967 the older Inuit were predicting, correctly as it turned out, 'that within the next five years motor toboggans will have completely replaced dog teams, as a means of travel'(5).

In terms of acquiring food the use of the snowmobile counteracted the local scarcity of game animals by extending the range of the hunters. For example, the RCMP at Cape Dorset reported that 'with the increase in the number of power toboggans here, the hunters are able to reach hunting areas they would not attempt to with a dog team in view of the distances involved, thus affording them good hunting with an abundance of game' (Ibid).

The major impact on food consumption of changes in land and water transportation in conjunction with the widespread use of the rifle, was to increase the returns from hunting.

The impact of motorized transport
(particularly of the marine engines) on the

> stability of year-round residence and on the increase in hunting productivity is evident in the remark of an older man: "As my son gets motors for the boats, we are always living here. As my son always gets animals we are no longer hungry. Do you know what I mean?"
>
> (Kemp 1971:108).

The new forms of transportation also made it easier to bring supplies of store-bought foods to outlying camps, thus increasing the consumption of these foods by the more isolated groups of Inuit. But the greatest impact of new means of transportation on food habits in the North was that of aviation.

Northern aviation began in 1921 when two Junkers aircraft flew into the Mackenzie valley carrying personnel to Norman Wells during the oil boom there (Lloyd 1948:163). In 1928 C. H. 'Punch' Dickins took the first plane over the Barren Lands of the Central Arctic and in the following year crossed the Arctic Circle to Aklavik (Wallace 1943:187). 'This trip to the shores of the Arctic Ocean revolutionized the fur delivery system, and almost overnight the aeroplane became the transport medium replacing the dog sled and canoe of former years' (Ibid). Within the next decade, wrote Lloyd, airmail had been established to the Canadian Arctic coast, float- or ski-equipped aircraft had become the normal means of long-distance northern travel and aircraft had made possible the development of the radium and uranium mines at Great Bear Lake.

The North American war effort gave a great boost to

arctic aviation. In 1942 the so-called Crimson Route was inaugurated (Lloyd: op. cit.:167). It began at Great Falls, Montana, and extended to Churchill, Coral Harbour, Frobisher Bay and on to Greenland and Europe, with an eastern link from Quebec via Fort Chimo to Frobisher. But in 1944 Major McKeand of the Bureau of Northwest Territories and Yukon Affairs wrote that the Eastern Arctic would long remain in a somewhat similar relationship to aircraft 'as the unplowed roads in the more civilized parts of the country are to motor vehicles in winter'(6). 'Ever since Punch Dickins made the first flight from Churchill to Chesterfield and Lake Athabasca,' McKeand explained, 'the use of aircraft has increased because the routes lie over comparatively level country, well watered with lakes and rivers but conditions are different in Northern Quebec and Baffin Island where the country is not level or well watered and, furthermore, dense fog adds to the difficulties.'

The great impetus to air travel in the Eastern Arctic and to its extension to the most inaccessible parts of the Central and Western Arctic was the DEW Line in the mid-1950s. Military technology applied to national defence overcame the geographical obstacles to full-scale development of air transportation. Airstrips and aviation facilities were constructed in the most remote parts of the Arctic, even in the rugged mountainous country of eastern Baffin Island. When the construction stage of the DEW Line project came to an end around 1957 several companies sought compensation in the northward extension of civilian traffic.

In 1942 when Canadian Pacific Airways took over control

of most of the commercial aviation in northern Canada it carried during its first year of operations an estimated 10 million pounds of air cargo (Wallace 1943:189-190). That was an indication of the potential of aviation to revolutionize food habits in the North. The air routes are the literal life lines to the highly dependent isolated settlements of the Arctic. The aircraft that fly them carry in almost daily supplies of food from the south. The sea-lift every summer still brings in the staples that survive storing for long periods. But perishables and current supplies arrive on the daily aircraft. Grocery stores near Dorval airport advertize in Nunatsiaq News that they deliver to the Nordair flight that arrives in Frobisher Bay around noon.

Those who make the most of this service are the white residents of the North, but one of the aims of a recently formed group in Frobisher Bay is to translate and clarify for the Inuit the sea- and air-freight ordering services available to them(7). Importing food directly from Montreal is still probably cheaper than buying it from either of the local general stores as long as one has adequate storage facilities and can order enough to justify the minimum freight charges. This will call for greater co-operative effort among the Inuit. But the range of foods made available to the residents of the North by air transportation is as wide as the food industry manufactures it. No longer are the northerners restricted to foods that are non-perishable and comparatively light and easy to carry, restrictions imposed by the earlier modes of transport both to and within

the Arctic. A supermarket advertisement chose at random from the back page of a northern newspaper -- in this case a copy of The Drum from Inuvik dated 17 July 1975 -- offers the following: minute fry strips, pork hocks, smoked picnics, chicken livers, chicken gizzards, chuck steak, chuck roast, chuck rib roast, rib steak, sweet cherries, lettuce, apples, oranges, plums, Lumberjack syrup, puddings, Rice Krispies, beef burgers, Chun King peppersteak dinner and Betty Crocker food helper. Air transportation has brought the Inuit a long way from the days of tea and bannock.

3.4 Food preservation and preparation

Bringing into the Arctic such an array of exotic foods as are now available would not be possible without the means of preserving and storing them, even on a short term. The role of refrigeration has been vital in changing food habits among the Inuit. One of the first to recognize the importance of refrigeration was Dr A. G. MacKinnon, the Medical Officer at Pangnirtung, in 1936. He felt there was enough game in the are to supply a much larger population than was living there at the time and that there was much meat wasted 'by these improvident people', enough to provide them 'with what extra they need to live without hunger'(8). Acting on this, wrote Dr MacKinnon, 'I have recommended a system of underground refrigeration and have made a start on the same.'

What he did was to build 'a construction somewhat on the model of a root cellar' using lumber, rocks and moss, in which seal meat could be stored from spring till winter

time[9]. This idea was taken up by MacKinnon's successor, Dr. T. J. Orford, who suggested in 1940 that an ice house be constructed in an attempt 'to overcome the lack of fresh food -- particularly meat -- at Pangnirtung during certain seasons of the year[10]. The Administration agreed. Major McKeand wrote to the Deputy Commissioner of the Northwest Territories saying that although it might sound ridiculous 'a refrigerator has become as necessary as a range in a modern Canadian Arctic home if perishable foodstuffs are to be kept and prepared for human consumption'[11]. Another technological development, the introduction of insulating materials in the construction of homes, 'reduces the cost of fuel, but no-one foresaw its effect on ventilation.' 'What Dr. Orford has in mind,' wrote McKeand, 'is a community cold storage plant where each white family would be allotted the necessary space for storage of fresh meats, vegetables and fruits.' In fact, nothing in Dr Orford's memo suggests that he was referring to the white population only. He had written that an ice house 'would be a great convenience for refrigeration of meat or fresh food of any kind <u>to the entire settlement</u>' (emphasis added). Dr MacKinnon's original idea expressly applied to the Inuit, for he suggested constructing ice houses at Cumberland Sound camps like Kingmiksoon, Bon Accord and Imigen where the population numbered more than forty.

Dr Orford eventually gave up the idea of a community freezer in favour of equipping the Medical Officer's house with a Kerosene Electrolux Refrigerator[12]. But the subject

remained open, and the idea of extending it had occurred to the Administration. 'The matter of cold storage at Pangnirtung and elsewhere in the Northwest Territories,' wrote the Deputy Commissioner, 'will be further considered on receipt of advise from the National Research Council'(13) (emphasis added). And the Administration admitted that the provision of cold storage would be of use to the Inuit as well as to the white residents. 'Although I am convinced that refrigeration is just as necessary for the whites as insulation has proved to be,' wrote Major McKeand, 'the Eskimos will appreciate an opportunity of preserving natural products to tide them over lean periods'(14). The tendency is to consider the shipping of refrigerators to the Arctic in the same light as sending coal to Newcastle, but in fact refrigeration is as much a necessity in the Arctic as anywhere else

> Contrary to popularopinion, food spoilage occurs in Arctic regions. The micro-organisms present in the air can bring about food spoilage when in a favourable environment. The number of air-borne micro-organisms is greater during the summer, but enough are present to bring about spoilage during the rest of the year despite continual snow cover. Both cold storage and refrigeration are necessary for the preservation of certain foods. All sanitary and storage procedures carried out in temperate zones should also be followed in preparing and serving food in arctic regions...
>
> Refrigeration is a problem in the summer among natives who do not possess electric or gas refrigerators. For three months during the summer the air temperature may remain enough above zero that food which cannot be frozen in underground cellars will spoil. Bland

> foods, such as creamed chicken, creamed puffs, etc., must be handled as in temperate regions. Food-poisoning outbreaks occur when these precautions are not observed...
>
> (Boyd and Boyd 1961:91-93).

The disadvantage of not having cold storage facilities was made clear to the Administration in 1946 when the Geological Department of Imperial Oil announced it had a surplus of about forty tons of frozen meat at Norman Wells which the company offered free of charge 'for distribution to Indian and Eskimo wards of the Government in Aklavik and Tuktuk area'(15). But the Deputy Commissioner of the North-west Territories had to decline the offer because 'this Administration has no facilities for storing frozen meat'(16). Later the Administration bought two large refrigeration units from Imperial Oil at Norman Wells for use at Fort Smith and Hay River(17).

But the provision of cold storage, like the provision of food itself, the government was prepared to leave in the hands of commercial enterprise whose activities increased rapidly in the Arctic form the late 1950s onwards. In the Western Arctic commercially owned refrigeration was eventually augmented by the provision of government-owned community freezers, but the Eastern Arctic was slow to get them. The Eastern Arctic has always been behind the Western in cultural change and development. In March 1962 the Regional Administrator at Frobisher Bay wrote: 'At the present time there are no community freezers functioning at

other than Frobisher Bay. The freezer at Cape Dorset has only had the pad constructed. At Pangnirtung the freezer has been constructed by the Department of Public Works but is not yet functioning and will not be turned over to us for use before the fall of 1962. At Pond Inlet and Igloolik the freezers are scheduled for 1962'[18]. In Quebec there was already a 25-to-30-ton freezer at Povungnituk[19] and others followed at Port Burwell, George River and Fort Chimo[20] and at Whale Cove[21]. In a remarkable reversal of policy the Administration made it clear that community freezers 'were established primarily for the storage of country food by the Eskimos' and government staff could store their food in them only if sufficient space were left[22]. By the fall of 1962 twenty-two walk-in freezers were in operation at locations right across the Arctic and at least three hundred domestic refrigerators and freezers[23].

With community freezers available for storage of large quantities of country foods, and growing numbers of domestic freezers for day-to-day purchases of the wide variety of foods being sold in the stores, the modern revolution in Inuit food habits was well under way. Beginning in the 1960s the government provided more and more housing units in a Housing Programme with rents on a graduated scale from $67.50 to as little as $2.00 a month, depending on the economic means of the family[24]. Refrigerators were not provided -- these had to be purchased by the tenants -- but a stove, a sink and electric fixtures were[25]. The provision of facilities for

the preparation of food, which became available to increasing numbers of Inuit, carried the revolution in food habits closer to full circle. The days of the soapstone lamp and seal oil as the only mode of indoor cooking had come to an end in the late 1920s with the universal acceptance of the Primus stove. The Primus stove suited the camping lifestyle of the Inuit, be it in summer tent or winter house, even though the smoke and grime that often accompany the burning of kerosene did nothing for the cleanliness of clothes and bedding. But the old seal-oil lamp, described as 'smokeless' by Farb (1968:58), was not really smokeless and it too gave off smut and grime. This was attested by the black lungs found in post-mortem examinations of old Inuit women from the Central and Eastern Arctic who had tended seal-oil lamps for most of their lives (Schaefer et. al. 1975). But on a Primus stove the methods of food preparation are as limited as on a soapstone kudloo. The final abandonment of the camps in the late 1960s and early 1970s and the move into permanent houses equipped with 'heater, sink, water storage tank, electric fixtures, and basic furniture' together with supplies of 'a certain amount of oil, hydro power, water and sewage pick-up'(24) accelerated the complete transformation of the Inuit way of life. One major aspect of that way of life was food habits. But the speed with which these changes came about left the Inuit confused and uncertain. Intellectual and social development lagged far behind the material changes. 'Although material culture among the Eskimos has undergone drastic changes in the twentieth century (i. e. house type, clothing, tools, etc.),

the means for utilizing the new material culture and the social values placed upon it have not undergone a concomitant change' (Thomas and Thompson 1972:13). Significant developments in the ideational and social adaptations of the Inuit had to take place before the modern revolution in food habits could be regarded as complete.

3.5 Notes and references

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(3) General medical report for the year September 1940 to September 1941: Dr J. A. Bildfell, Medical Officer, Pangnirtung (RG85, Vol. 815, File 6954, Pt. 3).

(4) Letter from the Administrator of the Arctic to the Director, Northern Administration Branch, d. 13 June 1962 (Public Archives Record Centre, File 1000/170, Pt. 2, Ref. No. N233).

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(7) Nunatsiaq News, 14 July 1977, p. 19.

(8) Letter from Dr A. G. MacKinnon, Medical Officer, Pangnirtung, to J. L. Turner, Director, Lands Division, Northwest Territories and Yukon Branch, d. 18 October 1936 (RG85, Vol. 815, File 6954, Pt. 3).

(9) Letter from Dr A. G. MacKinnon, Medical Officer, Pangnirtung, to J. L. Turner, Director, Lands Division, Northwest Territories and Yukon Branch, d. 16 September 1936 (RG85, Vol. 924, File 11675).

(10) Letter from Dr T. J. Orford, Medical Officer, Pangnirtung, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 5 November 1940 (RG85, Vol. 924, File 11675).

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(14) Memo from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A. Gibson, Deputy Commisioner, Northwest Territories, d. 26 February 1941 (RG85, Vol. 924, File 11675).

(15) Letter from Imperial Oil Ltd., signed by D. H. Piper, to H. Davidson, Purchasing Agent, Department of Mines and Resources, d. 5 July 1946 (RG85, Vol. 1007, File 17098).

(16) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to H. Davidson, Purchasing Agent, Department of Mines and Resources, d. 16 July 1946 (RG85, Vol. 1007, File 17098).

(17) Letter from E. G. Oldham, Superintendent, Forests and Wildlife, Fort Smith, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 9 October 1946 (RG85, Vol. 1007, File 17098).

(18) Memo from R. L. Orange, Regional Administrator, Frobisher Bay, to Assistant Administrator of the Arctic, d. 30 March 1962 (RG85, Vol. 677, File A251-3-21, Pt. 1).

(19) Letter from P. A. C. Nichols, Manager, Arctic Division, Hudson's Bay Company, to C. M. Bolger, Administrator of the Arctic, d. 27 February 1962 (RG85, Vol. 677, File A251-3-21, Pt. 1).

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(21) Letter from A. M. Millican, Regional Administrator, Churchill, to C. M. Bolger, Administrator of the Arctic, d. 3 October 1962 (RG85, Vol. 677, File A251-3-21, Pt. 1).

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CHAPTER FOUR

IDEATIONAL FACTORS

4.1 Introduction

In cultural systems man's ecological adaptation is the behaviour involved in the acquisition and use of energy and matter. In the course of his ecological behaviour man also acquires and uses information and hence develops the need to communicate. According to Back (1971:662) 'one of the conditions which distinguishes living systems is the use of communication and transmission of information instead of the transport of energy and matter.' In human systems information is both biological and cultural. Biological information is passed on genetically from generation to generation to determine the anatomy, physiology and biological and psychological functioning of the body. Cultural information, though biologically based, is acquired by perception, cognition, and the exercise of the creative imagination. It is based on the unique human ability to use abstract symbols in thinking, reasoning, speaking, writing, computing. This is man's <u>ideational adaptation</u>. It corresponds to the 'World Three' of the British philosopher Karl Popper: the world of actual or possible objects of thought, the world of concepts, ideas, theories, theorems, arguments and explanations, the world of all artifacts of the mind. The activity associated

with man's ideational adaptation is that which White (1943: 335; 1949:22) refers to as symboling: 'All human behavior consists of, or is dependent upon, the use of symbols.' Geertz (1964:62) says that all symbol systems have at least one thing in common: 'they are extrinsic sources of information in terms of which human life can be patterned -- extrapersonal mechanisms for the perception, understanding, judgment and manipulation of the world.'

4.2 Information gathering and dissemination

Like that of all primitive people, the food quest of the Inuit was based on a knowledge of their environment built up over thousands of years of adaptation, in their case to the arctic ecosystem. The Inuit lived traditionally by hunting, and the success of hunting depends on a detailed knowledge of animal behaviour in particular environmental situations. When the white men came to the Canadian North they brought new sources of food and a new kind of response from the Inuit. Operant conditioning, whereby a new response is acquired as a result of satisfying a need, is one of the most primitive kinds of learning. Among the Inuit the need was the age-old need to relieve hunger. After contact with the white men the new response was to consume the mainly carbohydrate diet that the white men offered, and the Inuit found it to be satisfying. It filled the belly with less trouble than hunting, than patiently, motionlessly waiting over a seal hole for hours on end. At first, as a number

of observers have commented, the Inuit did not take to the imported food but eventually became conditioned to it. As well as conditioning, another ancient form of learning came into play: imitation. By imitating the food habits of the white men the Inuit came to accept more and more of the white men's food.

But the white men were more sophisticated intellectually than the Inuit. Their ideational level was much higher. They began to perceive a difference between those Inuit who had adapted the white men's food and those who had not. As early as 1913, recalling a discussion with a Roman Catholic missionary about the 'distinct and universal difference in health' between those Mackenzie valley Indians who wear white men's clothing and live in white men's houses and those who 'keep the ancient customs in the matter of dress and dwellings,' Stefansson (1913:33) noted that he had since found these same elements 'equally harmful among the Eskimo, although among them must be added the surely no less dangerous element, the white man's diet, which is no more suited to the people than white men's clothing or homes.' At least by the 1920s reports from its various officers in the field alerted the government[1] and from that time onwards the question of diet and health has rarely been far from the minds of administrators and field officers concerned with the native people of the Canadian North.

The solution to the problem was known, or at least suspected, since Stefansson's travels in the Western Arctic in the early years of this century. In 1944, thirty years

after Stefansson published My Life with the Eskimo, the chief government nutritionist, Dr L. B. Pett, wrote to the Deputy Commissioner of the Northwest Territories: 'A review of the pertinent literature yields the information that improvement of diet for Eskimos depends on promotion of greater use of native foods and to a slight extent improvement of trading post foods. It is clear that the foods normally used in trading posts are susceptible of only a limited contribution to the general welfare of the Eskimos in comparison with adequate use of native foods'(2). Dr Pett based this statement on the findings of a seventeen-month government-sponsored survey undertaken by Winifred Hinton, a member of his own department. In her report, submitted in February 1944, Hinton wrote(3):

> The main conclusion that can be drawn from the findings in this report is that a problem of health does exist among the natives (Indians and Eskimos) in the Northwest Territories. It also appears that the problem bears a direct relationship to their food supply. It would seem that disabilities increase with the proportion of so called "white man's food" to the native food and that the Indians are inclined to adopt the new diet more than the Eskimos... The broad problem of actually improving the whole nutritional status, involves many factors including (a) economic status, (b) actively encouraging native foods and habits and how they are used, and (c) improving foods at trading posts [Emphasis in original].

Little or nothing was done about factors (b) and (c), and factor (a) got worse instead of better, culminating in the

economic slump in the five years after the Second World War. During the many long and often heated discussions on the socio-economic problems in the Arctic it occurred , at least to the medical profession, that there were 'other problems such as sanitation and nutrition'[4]. Dr J. A. Hildes of the University of Manitoba noted that of these 'the nutritional question is more important than I had previously thought. I understand that Dr. Willis of Northern Health Services plans to collect some data on this question and I hope the picture may soon be clearer on the extent and nature of nutritional defects' (Ibid).

But data collection had been going on for many years on board the Eastern Arctic Patrol, and the picture was very clear to most observers since the 1940s. In 1944, for example, blood examinations indicated malnutrition among the Inuit by the low level of haemoglobin[5]. It was obvious that Inuit health was declining with the increasing proportion of white man's food in their diet. In 1947 the Deputy Commissioner of the Northwest Territories wrote[6]:

> Last summer on the Eastern Arctic Patrol, the question came up as to what proportion of white man's food is permissable in the Eskimo diet without impairing health conditions. We know that the level of native health drops with the excessive use of white man's food, but we do not know how much or what kind of food causes the deterioration. Presumably a certain amount of white man's food is permissable without undesirable deterioration but we do not know where the borderline lies.

Nutritionists needed more information on the relative merits of native and imported foods. The first results of this kind of research, which the Food and Drug Division of the Department of National Health and Welfare undertook, came out in 1948. They showed native food nutritionally superior to that of the white man. For example, the protein content of seal was 19.6 per cent and of whale meat 21 per cent compared with 16 per cent for beef and about 17 per cent for many common fish like halibut(7). In a cold environment like the Canadian Arctic an adequate intake of protein was essential. The more the Inuit depended on imported foods the less protein they were receiving and the more prone they were to deficiency diseases. In 1950 analysis of caribou and fish showed that 'the two local products... compare favourably in total food value with any of the items listed that might ordinarily be sent in supply ships'(8). The Alaskan Health and Nutrition Survey of 1954-58 confirmed these findings. This American survey showed that native fish and meat resources contain much more of the necessary proteins and less of the potentially harmful fats than commercially available meats from domesticated animals(9). Trout, char, salmon and pike in dried form have twice the amount of protein and fat of white fish. It was not surprising that medical surveys carried out in the Canadian Arctic at the same time, for example in 1955, showed that 'the percentage of Eskimos suffering from poor nutrition was quite high'(10).

In spite of these surveys, in spite of an interest in nutritional problems among the Inuit going back to the 1920s,

the chief of the Nutrition Division of the Department of National Health and Welfare was able to write in 1962[11],

> A key factor in a nutritional supplementation programme is an appreciation of present nutrient intake in order to assess the nature and quantity of supplement to be provided. While we realize that there must be a large number of Eskimos for whom nutritional improvement is desirable, we have been consistently handicapped by a lack of knowledge of the actual diet of these people... Those Eskimos which have been examined through past years... have not contributed much help in this regard, as none showed evidence of specific nutritional deficiencies at the time they were seen.

The government had known for forty years that something was wrong with the Inuit diet but had not set up a detailed quantitative survey of what the Inuit were actually eating. In 1963 they made an attempt to rectify this situation and hired a researcher to conduct the kind of itemized, quantified survey that was required as a basis for action. But this survey was never completed[12]. In 1965 the government made another attempt to discover the actual food habits of the Inuit by sending questionnaires to school children right across the Arctic[13]. But parents and teachers expressed considerable opposition to the questionnaires, and little of value came from the exercise. In 1965 and 1966 Dr Otto Schaefer investigated the consumption of native and store-bought food at the settlements of Holman Island, Coppermine, Frobisher Bay, Pangnirtung, Spence Bay and Thom Bay and also at nearby hunting camps. In addition he carried out

physical and laboratory examinations on random samples of these population groups to assess their general and nutritional health status. A preliminary report on food consumption and general living conditions and activity patterns in the first four of the settlements listed above was submitted through regional offices to Medical Services but apparently never transmitted to headquarters in Ottawa nor to the Department of Indian and Northern Affairs (Schaefer: pers. comm.). Then, nearly a decade later, Nutrition Canada carried out its well-publicized surveys of the eating habits of the Canadian population, including a representative sample of urbanized Inuit among whom the problems of malnutrition are more advanced. This Nutrition Canada survey was only one example of a rapid growth of nutritional research in the Arctic in recent years, partly stimulated by realization of widespread malnutrition, and in all the circumpolar regions dietary surveys 'attest to the pervasive inroads of commercial items into the native food chain' (Draper 1976:120).

The value of information is as a basis for behaviour. Man acts on information, and thus the dissemination of information and the degree of understanding of those who receive it are of vital importance. A major problem in the Arctic has been the low educational attainment of the Inuit. The 1961 census reported that only about 22 per cent of the total population of the Northwest Territories had attained Grade VIII academic standing compared with approximately 38 per cent of the population of Canada as a whole. 'The comparison would be even less favourable for the Northwest

Territories if it were not for the large numbers of government employees, teachers, nurses and others living in the north who had obtained their education elsewhere'(14). The message of the researchers was largely meaningless to an uneducated population who learned mostly by imitation and conditioning. The obvious contradiction between what the white men were doing and what they were saying was confusing to the Inuit. If country food was so much better than imported food why did the white men persist in eating the imported kind? And why did they give imported foods to the Inuit as relief and as part-payment of wages?

Through the 1960s and into the 1970s the Inuit were subjected to further contradictions. Education was steadily improving and newspapers were appearing in places like Frobisher Bay, Inuvik, Aklavik and other centres of population in the Northwest Territories and the Yukon. These newspapers printed and discussed the dietary findings of surveys in the North and gave advice on food purchasing and preparation, mostly in English but sometimes, as with the Frobisher Bay Nunatsiaq News (formerly Inukshuk) and the Northern Affairs monthly Dialogue North, in Inuk syllabics. The reports in these papers told the Inuit that surveys had shown native foods to contain more iron, vitamins and minerals than did the imported foods in the stores. The traditional diet had provided all these in adequate amounts 'while nutritional deficiencies such as iron deficiency, anaemia, malnutrition and obesity are increasingly found in population groups with little or no reliance on native food resources'(9). And the

papers reported the work of Dr Otto Schaefer for those who were unable to attend his public lectures. One hundred grams of uncooked seal, said Dr Schaefer, has 32 per cent prptein and 1.8 per cent fat, while chicken has only 20 per cent protein and as much as 13 per cent fat; walrus has 27 per cent protein and 12 per cent fat, while steak has only 16 per cent protein and a frightening 25 per cent; and so on(15). But against these newspaper reports and the speaking engagements of men like Schaefer, with their statistics, their nutritional terminology, their sometimes difficult phraseology and vocabulary, all reproduced in tiny hard-to-read news-type, there stands in opposition the bright, loud, clear message of the newspaper and television advertisers: EAT ME and EAT MORE OF ME. Television, more than newspapers, has become a very powerful instrument of ideational change in the North, one against which the more sober, less persistent media and individual educators are finding it difficult to compete. Their message is lost, buried in newsprint. The message of the food manufacturers is shouted simply and repetitively into almost every Inuit household in the North with an imperative authority no newspaper and no educator can hope to achieve.

The more concerned, more educated Inuit and the territorial government are trying to counteract the more pernicious advertizing and supermarket pressures. Three Inuit researchers from Frobisher Bay used an LIP grant to study Inuit nutrition and attitudes to food(16). They showed clearly that the Inuit had 'an extremely nutritious

diet before the advent of canned foods and other mass market items.' Out of these studkes came the main aim of the project: to provide the Inuit of Frobisher Bay with nutritious foods that cost less. They began with a programme to supply elementary school children with high protein snacks of cheese and peanut butter. Another Frobisher Bay venture was the Food Talk Project, a group trying to study and assess the nutritional needs and habits of the population of the town, both Inuit and white(17). They found the Inuit uneducated about non-native foods and took it upon themselves to supply the Inuit with knowledge of inexpensive and nutritious store-bought foods, to convey the wishes of the people to the stores and to clarify sea and air freight ordering services.

In February 1977 a report was tabled at the Northwest Territories Council containing details of a nutrition programme drawn up by the Department of Social Development(18). The department itself would provide training sessions for doctors, teachers, day-care personnel, social workers, restaurant staff and others who offer meal services or influence eating habits. Nutritional education and counselling, meal assistance schemes, information services and properly qualified personnel would also be integral parts of such a programme. Unfortunately this ambitious programme never got off the ground.

The well-intentioned aim of the designers of the programme was to emphasize education, to make an all-out attempt to raise the ideational level of the Inuit with respect to food habits and diet. The awful consequences of ignorance in these

matters was brought out by Ellen Yearsley (1960:32):

> Powdered milk would be very valuable. But what happens to the milk that has been mixed, with the scantiest regard for proportions, in a basin which has not been washed since it was used for a mess of oily seal stew and is left standing in a warm room for a couple of days? Or when evaporated milk, open for a day, is poured into a baby's bottle, unwashed for a week, and diluted with water from a contaminated tank? These examples are not the exceptions; this kind of thing happens every day.

These examples were reported in 1960, sixteen years after the Deputy Commissioner of the Northwest Territories declared that better nutrition through education was one of the policies of the Northern Administration(19). Not until the 1960s did the Administration make a whole-hearted attempt to educate the Inuit mother in the elements of home-making and nutrition.

4.3 Home-making education

The first food-preparation course for the Inuit appears to have been organized by the Provincial Institute of Technology and Art in Calgary from January 5 to March 13 1959(20). Eight girls from Frobisher Bay and two from Aklavik attended this 'food service training course' which was oriented towards the restaurant or public service type of eating rather than domestic eating, though the principles taught could be applied in the home. But one senses from

the assistant instructor's report on the course a certain disappointment, a feeling that the course did not achieve as much as was hoped for. Partly responsible was the fact that eight of the ten girls came from the Eastern Arctic where educational standards were lower even than in the Western Arctic and 'their lack of understanding of the English language proved to be quite a disadvantage' (Ibid).

But the idea of teaching home economics was well received by a Northern Administration that was at that time putting a strong emphasis on the development of vocational training for the Inuit. In January 1960 they appointed a home economics specialist, Mrs Mary Maguire, to work in the Vocational Training Section(21). 'Changing nutritional patterns' was among the subjects Mrs Maguire wanted to discuss with teachers interested in home economics and home-making courses in northern settlements.

Thereafter settlements right across the Arctic inaugurated a spate of new courses. One of the first was at Port Harrison in northern Quebec(22). It covered home nursing, cooking, sewing, mending and dress-making, child-care and household budgeting. Cooking classes emphasized 'the use or improved use of local game produce and its supplementation by easily obtained foods. Nothing was used which could not be obtained locally and could not be stored easily. No utensils or cooking appliances were used except those which could be found in the homes of the girls.'

> In our cooking classes we sought to use local game and simple foods obtained from

> the Hudson's Bay Company. We introduced the use of the "Pressure Cooker" as the HBC manager and I thought that this would be excellent for use in igloos where a primus stove is used and steam affects the walls of the house. The girls were very pleased as we found that we could make a seal meat stew in in twelve minutes instead of two hours, with a very great saving of fuel and also avoiding steaming up the igloo.
>
> The use of such ingredients as rice, cheese, macaroni, dried eggs, dehydrated vegetables and dried fruit were [sic] taught so that there would be something else to eat than a diet of seal meat and nothing else when it was available or a diet of tea and nothing else when seal meat was not available.
>
> We tried to adapt Canada's Food Rules here and did very well.

This Port Harrison course included the feeding and care of infants. Several babies had died there from dirty bottle-feeding (Ibid).

In the summer of 1960 a four-weeks' course in home-making was organized at Frobisher Bay. One of the general aims was to 'develop in the students the realization that changed living conditions necessitate a new way of life and new attitudes to many phases of family living'(23). After an enthusiastic beginning, however, the attendance at classes was erratic. This was attributed to the 'stiff competition offered by the theatre, the allure of the night spots, lounge, terminal coffee shop and pool hall, and the established prowling habits of the young women'(24). The girls enrolled in the course prepared and served the noon meal of dishes that could, for the most part, be cooked on a Primus stove.

But of greater importance than the dishes that the girls learned to make were topics like basic nutrition requirements and the importance of good food for health, meal patterns that impressed on the girls the need for a wide variety of foods every day, the preparation and serving of adequate portions of food every day, good standards of cleanliness in food preparation, basic equipment, and storage without refrigeration.

In the winter of 1960-61 a 'shopping, sewing and cooking programme was set up at Baker Lake(25). The meal patterns recommended to the teacher who was going to run the programme were:

Breakfast:	fruit (any form available) cooked whole grain cereal and milk.
Lunch or supper:	meat sandwiches and cocoa.
Dinner:	stew of meat and vegetables, milk or fruit pudding, bannock with jam and tea.

The main emphasis in the dinner was 'the balance of the day's meals.' For example, bannock and tea were not enough on their own but only a 'good accompaniment' to a meal. The use of local meat was to be recommended if it was available. 'We need to show the people how to adapt to new conditions not try to change them entirely to southern Canadian ways.'

In 1961 courses started at Igloolik, Broughton Island, Great Whale River and at the Fox Main DEW Line station. The Fox Main programme was organized by Miss Joyce MacKinnon, a

home economist who was one of the most enthusiastic advocates of these classes for women. Her aim in the cooking part of the course was to 'try to stimulate interest in more adequate nutrition through appealing to the mother's interest in the welfare of her children'[26]. This was a philosophy that appealed to Anne Berndtsson, the Community Principal at Cape Dorset, a woman with strong feelings about the low living standards of most of the Inuit families in the settlement. In calling for a home economics programme at Cape Dorset in 1961 she wrote[27]:

> If the Government is interested in teaching the Eskimos to be wage earners, then surely the Government is also interested in teaching them to use their wages to the best advantage ... An excellent place to start an organized program is with the women. It is the Canadian mother who moulds the future citizens more than the father. It is the mother who runs the household and has the greatest effect upon the children. It is the mother who plans the diet of the family. So it is here in Dorset -- it is the mother who has the responsibility of making the food, if any is made. These people need help in doing this.

Also in 1961 home-making courses were organized at Fort Chimo, Eskimo Point and Pond Inlet; in the following year at Payne Bay and Povungnituk; and in 1963 Churchill, Rankin Inlet, Grisefiord, Arctic Bay, Wakeham Bay and Sugluk all joined the growing list of settlements providing these courses for both single girls and married women. In all of these cases the aims were identical. They were not only to 'introduce and develop basic cooking skills' but also to

'contribute to the raising of the standard of nutrition and health generally in the country'[28]. One result of the courses was to introduce Inuit women to the widening range of exotic foods then flooding the stores and supermarkets of the arctic settlements[29].

The value of these courses and their impact on Inuit food habits have never been objectively assessed. From the numerous reports of those involved in teaching or administering them the success of each was always qualified: erratic attendance, too short in duration, demanding more knowledge or more equipment and facilities than the women possessed. Some success was undoubtedly achieved, but, as the Regional Administrator at Frobisher Bay reported[24]:

> It is unrealistic to say that because one of the students was seen to buy tomatoes and brown rice that her dietary habits have been improved. Isolated instances of new attitudes and appreciations have been noted, but it may have been an experience other than the four week course which has brought about the change in thinking.

4.4 Schools

When the Department of Northern Affairs and National Resources accepted responsibility for providing schools and operating an integrated school system for the whole population of the Northwest Territories in 1955 less than 15 per cent of the Eskimo school-age population was enrolled in schools in the Territories. This compares with

30 per cent of Indian children and 90 per cent of others[14]. By January 1964 'as a result of a vigorous policy of school construction' approximately 75 per cent of the Inuit population between 6 and 15 years of age was enrolled compared with 72 per cent Indian and 99 per cent others (Ibid). This increase in school attendance, though it fell short of the 100 per cent hoped for by 1968[30], had certain repercussions on Inuit food habits. Basically it increased the numbers of those able to read and write and improved the ability of the Inuit to receive information from government sources and the media. This met one of the major criticisms of the organizers of the home-making courses in the Arctic, especially in the Eastern Arctic. At the same time, however, the ability to read exposed growing numbers of young Inuit to the advertizing of less desirable foods, like candies, soft drinks, sugared cereals, in newspapers and magazines endowed with the new authority of the printed word.

School attendance was another way to introduce Inuit children directly to southern Canadian foods through the school lunch programme. Biscuits, milk and tea were commonly given to pupils, for many of whom the school lunch was the only regular meal of the day. The official practice of serving these lunches goes back to 1944. 'With further reference to the suggestion of providing a noonday meal for the Eskimo attending day schools,' wrote the Deputy Commissioner of the Northwest Territories that year, 'we have ordered a generous supply of the special biscuit now being issued to Indian schools...'[19] The danger of supplying

even specially fortified biscuits, along with milk and tea[31], was that it reinforced the belief that biscuits and tea, the new standard bill of fare for many Inuit, constituted an adequate diet. In so doing, the school lunch programme may have caused lasting harm to Inuit food habits which required years of later education to eradicate.

One reason why the target of education for every child in the North could not be reached in 1968 was that the economic conditions in the country demanded a cutback in the school building programme[30]. As a result, many children had to be sent away to schools outside their home settlement or home region and be put up in student hostels and residences in places like Inuvik, Chesterfield Inlet, Frobisher Bay and other centres further south. The majority of the 51 children at Bompas Hall, Fort Simpson, in 1965-66, for instance, were Inuit from Bathurst, Coppermine and Concession Bay[32]. Residence at these hostels thus exposed the children and the adolescents to new physical surroundings as well as to new foods and habits of eating.

In hostels and other residences the children lived and ate and acquired the eating habits of the white administrators. In 1966 Ann Feyrer, the regional dietician, made a tour of inspection of all the school residences in the Northwest Territories and reported on the regimen and food practices she found in each. At Stringer Hall in Inuvik, for example, she noted that 'The children's acceptance of foods has broadened considerably. Pizza is a favourite dish'[33]. This broadening of the children's dietary habits was found

to be general in the school residences and presumably would be brought home to the smaller settlements.

At Stringer Hall, as a typical example, 272 children were in residence. Their ages ranged from six to twenty-one -- so a number were not exactly children -- and they came from the Mackenzie delta, the DEW Line sites and the Cambridge Bay area. The hostel used a six-week cycle menu, though the daily fare could be changed frequently on account of the arrival of fresh vegetables, the use of left-overs, or the request for something special from the students. Milk consumption was high, averaging 2.6 pounds of dry skim milk powder per child per week or about 1.5 quarts of reconstituted milk daily. In addition ice cream and cheese were each served twice a week. The cheese, together with about three helpings of eggs per week, were served as protein alternates to meat, but meat or one of the protein alternates was always served daily. Two servings of fruit were available every day along with a food high in vitamin C. Potatoes and one other vegetable were served daily, sometimes two other vegetables. Bread -- white, brown or cracked wheat -- was available as desired and whole grain cereals were served every day, either at breakfast or as desserts or cookies. This pattern was much the same at all the hostels because of the general use of the Canada Food Guide, with local variations depending on the availability of foods, facilities and manpower.

Considering the increasing number of children exposed to schooling away from home, the impact of prolonged

residence eating habits was presumably a lasting influence on the later eating habits of the mature adults, if only by breeding familiarity with the exotic foods that were regularly served. The impact of school meals and residence living on Inuit diet has not been given detailed study.

4.5 Notes and references

(1) Letter from O. S. Finnie, Director, Northwest Territories and Yukon Branch, to Col. C. Starnes, Commissioner of the RCMP, Ottawa, d. 21 June 1928 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(2) Letter from L. B. Pett, Director, Nutrition Services, Department of Pensions and National Health, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 20 March 1944 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(3) A study of the food habits and supplies in the Northwest Territories: Winifred Hinton, Nutrition Services, Department of Pensions and National Health, submitted February 1944 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(4) Letter from Dr J. A. Hildes, Department of Physiology and Medical Research, University of Manitoba, to B. G. Sivertz, Arctic Division, d. 5 December 1956 (RG85, Vol. 1477, File 251-1, Pt. 5).

(5) Memo from Dr W. L. Falconer, Acting Assistant Superintendent of Medical Services, to R. A. Gibson, Deputy Commissioner, Northwest Territories, d. 19 March 1945 (RG85, Vol. 855, File 8012, Pt. 2).

(6) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to R. H. Chesshire, Manager, Fur Trade Department, Hudson's Bay Company, d. 7 March 1947 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(7) Letter from L. B. Pett, Chief, Nutrition Division, Department of National Health and Welfare, to J. G. Wright, Chief, Arctic Division, d. 16 November 1948 (RG85, Vol. 1037, File 20802).

(8) Letter from L. B. Pett, Chief, Nutrition Division, Department of National Health and Welfare, to R. A.

Gibson, Deputy Commissioner, Northwest Territories, d. 23 June 1950 (RG85, Vol. 1037, File 20802).

(9) Yukon Indian News, 23 February 1977, p. 15.

(10) Minutes of a meeting on rations for Eskimos, Ottawa, 25 October 1955 (RG85, Vol. 480, File 251-1-2, Pt. 3).

(11) Letter from J. E. Monagle, Chief, Nutrition Division, Department of National Health and Welfare, to W. Rudnicki, Chief, Welfare Division, Department of Northern Affairs and National Resources, d. 3 June 1962 (RG85, Vol. 480, File 251-1-2, Pt. 3).

(12) See papers in RG85, Vol. 1658, File NR2/3-59.

(13) See papers in RG85, Vol. 1416, File 251-1-2, Pt. 4.

(14) Memorandum to Cabinet: A Five Year Education Plan for the Northwest Territories and Northern Quebec, 1965-70. Submitted 9 January 1965 (RG85, Vol. 1435, File 600-1-5, Pt. 5).

(15) The Drum, 17 July 1975, p. 13.

(16) News of the North, 12 February 1975, pp. 21-23.

(17) Nunatsiaq News, 14 July 1977, p. 19.

(18) The Drum, 24 February 1977, p. 14.

(19) Letter from R. A. Gibson, Deputy Commissioner, Northwest Territories, to Rev. J. O. Plourde, Oblate Commission, Ottawa, d. 11 March 1944 (RG85, Vol. 98, File 251-1-2, Pt. 1).

(20) Report on Food Service Training Course, Provincial Institute of Technology and Art, Calgary, 5 January to 13 March 1959: Mrs A. Baxter, Assistant Instructor (RG85, Vol. 501, File 680-3-3, Pt. 4).

(21) Memo from C. M. Bolger, Administrator of the Arctic, to J. F. Delaute, Area Administrator, Frobisher Bay, d. 25 January 1960 (RG85, Vol. 684, File A680-1-14, Pt. 1).

(22) Port Harrison Homemakers' Course: T. B. Gold, Community Teacher. [1960] (RG85, Vol. 684, File A680-1-14, Pt. 1).

(23) Memo from J. F. Delaute, Area Administrator, Frobisher Bay, to C. M. Bolger, Administrator of the Arctic, d. 1 June 1960 (RG85, Vol. 684, File A680-1-14, Pt. 1).

(24) Report on Summer Homemaking Course, Frobisher Bay, 1960: J. F. Delaute, Regional Administrator. Submitted 5 January 1961 (RG85, Vol. 684, File A680-1-14, Pt. 1).

(25) Memo from B. Thorsteinsson, Education Division, to C.M. Bolger, Administrator of the Arctic, d. 6 September 1960 (RG85, Vol. 684, File A680-1-14, Pt. 1).

(26) Report on Homemaking Classes conducted at Fox Main Dew Line Station for the Wives of Federal Electric Eskimo Employees, 5-19 July 1961: E. J. MacKinnon, Home Economist (RG85, Vol. 684, File A680-1-14, Pt. 2).

(27) Memo re Home Economics Program, Cape Dorset: A. Berndtsson, Community Principal, d. 20 October 1961 (RG85, Vol. 684, File A680-1-14, Pt. 1).

(28) Memo from A. M. Millican, Regional Administrator, Churchill, to C.M. Bolger, Administrator of the Arctic, d. 15 February 1963 (RG85, Vol. 684, File A680-1-14, Pt. 3).

(29) The foods required for the home-making course at Frobisher Bay in 1960 included dried white beans, dried split peas, macaroni, white and brown rice, spaghetti, cheddar cheese, Klik or similar meat, canned salmon, meat balls, fresh meat for roasting, canned tomatoes, wax and green beans, peas, carrots, corn, peaches, fruit cocktail, dried apricots, dried prunes, raisins, pudding powders, Jello and chocolate. See Reference (23) above.

The supplies recommended for the course at Baker Lake in the winter of 1960-61 included the following foods 'which should probably be bought by local purchase as needed': canned tomato juice, grapefruit and orangesections, dehydrated apples, apricots and peaches,prunes, fruitcake fruit, dates, broken walnuts, Special K cereal, Grape Nut flakes, quick cooking oats, bread flour, Graham flour, yeast, pure whole egg powder, fine granulated sugar, medium brown sugar, dried skim milk powder, evaporated milk, Prem or Klik or Spam or equivalent, meat (fresh if possible) for stews, dehydrated potatoes, cabbage, carrots and beets, canned peas and green or wax beans, salt, black pepper, onion salt, thyme, parsley, lard or shortening, margarine, baking powder, cocoa and jam. See Reference (25) above.

(30) Memo from R. A. J. Phillips, Director, Northern Administration Branch, to B. Thorsteinsson, Chief, Education Division, d. 8 January 1963 (RG85, Vol. 1435, File 600-1-5, Pt. 3).

(31) Letter from D. L. McKeand, Bureau of Northwest Territories and Yukon Affairs, to R. A. Gibson, Deputy Commissioner of the Northwest Territories, d. 7 February 1944 (RG85, Vol. 827, File 7242).

(32) Report re Food Services, Bompas Hall, Fort Simpson; K. A. Feyrer, Regional Dietician, to Regional Director, Foothills Region, Medical Services, d. 15 March 1966 (RG85, Vol. 1416, File 252-1-2, Pt. 4).

(33) Report re Food Services, Stringer Hall, Inuvik; K. A. Feyrer, Regional Dietician, to Regional Director, Foothills Region, Medical Services, d. 15 March 1966 (RG85, Vol. 1416, File 252-1-2, Pt. 4).

CHAPTER FIVE

SOCIAL FACTORS

5.1 Introduction

Mankind everywhere exists in structured social groups or networks, 'relevant series of linkages existing between individuals which may form a basis for the mobilization of people for specific purposes, under specific conditions' (Whitten and Wolfe 1974:720). The basic purpose for which individuals are mobilized is the quest for food, the particular ecological adaptation of the people using a particular technology. The orderly relationships among individuals and groups are maintained by the social system, the total pattern of social organization in both its structural and organizational aspects. The total pattern of social organization constitutes man's social adaptation to the environment. Four components make up man's social adaptation: demographic, political, ideological and economic.

The demographic component comprises the statistical characteristics of the population itself: its size, density and distribution, the size of local groups and families, the composition of the population in terms of age structure, sex ratio, marital ratio, health, education and ethnic make-up. All of these depend on fertility and mortality rates, population control behaciour and migration patterns, and these in turn are largely influenced by the ecological adaptations

of the people and their ideational level in terms of educational standards and intellectual sophistication.

The political component of social systems appears to be largely a function of increasing population pressure. Political adaptation involves the organization and management of the public affairs of a society, the network of social relationships that allows for the co-ordination and regulation of behaviour related to the maintenance of public order. This inevitably involves the problem of how power and authority are distributed and exercised in society, and this problem is intimately related, not only to the demographic component of society, but to the ecological, technological and ideological aspects.

The ideological component of society comprises the belief systems subscribed to by its members. There is usually a dominant ideology and others subordinate to it, all more or less linked to and legitimating the political and economic interests of the groups that subscribe to them. Once closely bound to the ideational adaptation of society, the two are now more often in conflict and it is better to consider them separately in studying modern populations.

Finally, the economic component of social adaptation involves the creation and maintenance of systems of exchange. The economic component refers to the interlocking of production, consumption, needs and wants in long-term arrangements for the distribution of goods and services throughout the population unit.

5.2 Political and ideological factors

In the study of Canadian Inuit food habits the influence of political and ideological factors is marginal. Inuit religion, like most religions, was intimately related to the environment, both natural and cultural. It was the system of beliefs and practices that made the environment understandable, acceptable and manageable. It reduced the Inuit's ignorance and fear of the world around them and of the past, present and future status of that world. Ideologically the Inuit lived under the assumption that spirits controlled both the natural world and the major events in human life. Most importantly, spirits were reponsible for the presence or absence of seals or caribou or for the raising of a storm that would threaten the safety of a hunter or make it impossible for him to hunt and obtain food. Consequently the lives of the Inuit were burdened by innumerable taboos and religious observances, the breaking of which could have dangerous consequences for the individual or for the whole community. 'The strict taboo system indeed constituted the cornerstone of their religious life' (Balikci 1970:218) and was in a sense 'the underwriter of the supernatural order' (Ibid:224). Balikci believes that taboos functioned as important psychological control measures for the reduction of anxiety, but Vallee (1967:170) interprets them in ecological terms. The taboo on pursuing one kind of activity while another was going on -- for example, fishing and sewing while

the fall caribou hunt was underway -- served to channel all effort into the most crucial activity. The displeasure of the all-powerful female deity, Nuliajak, at seeing unused carcasses on the tundra acted as a check on overhunting and thus encouraged conservation of the food supply.

Among traditional Inuit, then, the religious beliefs, together with the demographic and economic structures, provided a generally effective solution to many of the basic problems brought on by life in an arctic environment with a limited technology. But contact with Europeans and North Americans brought into question the validity of traditional beliefs by raising doubts about the importance of various rituals and taboos connected with hunting, and this questioning of religion in turn affected the traditional means of social control. The threat of supernatural punishment for deviating from approved Inuit practices lost much of its impact. The white man's answers to the age-old questions of life and death, man and nature, supplanted the traditional explanations. The role of the shaman declined and never recovered. The white man's shaman, the priest or minister, replaced the angakok. The obedience once rendered the behests of the shaman was transferred to the word of the Christian missionary but not always with happy results for the people. For example, Sunday became a hallowed day and the commandments of the Church forbade any activity on that day, even the necessary hunting for food. The RCMP frequently reported this refusal to hunt on Sunday. One patrol near Amadjuak on the south coast of Baffin Island

found the Inuit 'idling around camp, although the day was fine and calm for seal hunting. It being Sunday, they objected to hunting seal, although every fine day counts at this time of year in getting a supply of seals in cache for the coming winter' (RCMP 1930:86). The RCMP report explains that the Inuit around Hudson Straits can be short of food at any time of the year. The police and traders were 'continually urging them to take every opportunity to lay up seal meat for future use', but the Inuit did not pay much attention to their advice, especially when it went against the strict commandments of their new religion.

> Today ritual control of the forces of nature and of the food supply has almost disappeared; technology is considered the mainspring of well-being. Prayers may still be said for good hunting and good travelling conditions, and the Sunday service may include an analysis of a hunting success and even a request for guidance in the hunts to follow. Hunting decisions may also be affected by dreams. None of these activities, however, has the regulatory powers of the intricate symbols and beliefs of early times. The hunters complain of a change in the seals' behavior. Nowadays, they say, only the young animals are curious and can be coaxed to come closer to the boat or the edge of the floe ice. The mutual trust between man and his food supply has evidently been lost in the report of the high-powered rifle and the rumble of the outboard motor.
>
> (Kemp 1971:114)

The Inuit easily and naturally extended religious obedience to political obedience. 'Even though they might not always quite understand the meaning and purpose of the law,' said a government report quoted by Jenness (1964:163), 'the natural

tendency of the Eskimo is to obey it. Their communal life has taught them that the wishes of the individual must be subordinate to the good of the majority, and this has made them especially easy to deal with.' This made it easier for the Inuit to accept new values, new concepts of moral standards and behaviour, new interpretations of right and wrong, legal and illegal. What the Inuit accepted, in fact, was not only a new religious outlook but a new outlook on authority -- institutionalized, formal, impersonal authority imposed by recognized law makers. In other words, Inuit social organization acquired a new political dimension. Inuit society acquired this new political dimension not by the evolution of its own structure and complexity but by being grafted on to an already evolved political state. The state-level political structure -- its legal system, land tenure, resource ownership rules, military organization and system of individual rights and privileges -- was Euro-Canadian not Inuit. The high-status positions were held by various non-Inuit representatives of powerful outside organizations: government employees, commercial agents, teachers, clergymen (Dunning 1959:117; Oswalt and Van Stone 1960:163). Regardless of their personal qualifications, or of the way in which they carried out their roles, by virtue of their position in the native community they held supreme power. As Dunning points out, 'Their roles are central to the process of change engendered by culture contact and the subsequent reorientation of indigenous society toward a cash economy.'

A period of social dislocation marked the changeover of authority within the Inuit society from that of religious leaders and older respected members of the family or the hunting group to that of formal law enforcement officers and government and commercial officials. As a result of the transition from one system of political control to another a generation grew up with little respect for control of any kind, and the public order broke down. The excessive drinking and related delinquency of the early 1960s were symptoms of this. The problem of alcohol abuse and the breakdown of social controls over the younger generation developed simultaneously. At a meeting of the Committee on Social Adjustment in the Arctic the Assistant Director of Northern Administration Branch pointed out that the Church had built a protective tent around the people, giving them a strong sense of right and wrong, a code of morals and ethical standards. Then almost suddenly the tent was removed. The result was moral conflict in which the new and strong temptation of alcohol apparently prevailed(1).

It so happened too that those newly endowed with authority in the eyes of the Inuit were also responsible for the issue of relief, for the feeding of school children, for the sale of food in the stores. The food thus given or sold to the Inuit was in a sense blessed by its provenance. This was the food that the white men gave to the Inuit; this was the food that the white men ate themselves; therefore it was good. The tendency of the Inuit to follow not just the behest but the example of the white man led them further into

the quagmire of poor eating habits.

5.3 Demographic factors

One of the most significant developments in the Canadian Arctic in most years since the Second World War has been the phenomenally rapid rate of growth of the Inuit population (Freeman 1971; Duffy 1977). The Canadian Inuit are one of the fastest-growing populations in the world, their numbers increasing at rates that are in excess of those of most Third World countries. A major factor in this population explosion in the Arctic, as in much of the Third World, was the shortening or abandoning of the traditionally prolonged period of breastfeeding (Section 2.7). While intervals between siblings exceeded three years in Cumberland Sound (Schaefer 1959) and in Igloolik (Hildes and Schaefer 1973), intervals shortened to around one year in the more acculturated settlements. In the Western Arctic the trend was already apparent in the 1940s and 1950s and in the Central and Eastern Arctic it showed up in the 1960s. While earlier explorers described the typical Inuit family as being relatively small and this held true for outlying camps in the 1950s and early 1960s, women with more than ten children became more the rule than the exception in Aklavik and later Inuvik and in some large settlements elsewhere, especially in Arctic Quebec. In the rest of the Arctic the tendency to shorter birth intervals and excessively large families, that resulted from the decline of breastfeeding and from other factors closely related to

urbanization, wrought demographic havoc for only a few years. It was eventually counteracted by the systematic drive of Medical Services to make birth control measures available, not only on strict medical grounds, but to all multiparous females desiring such anti-fertility medications or operative procedures.

The government was well aware of the problem of rapidly increasing population -- norther health and other reports having stressed it annually for years -- and was alive to the consequences of this kind of growth for the well-being of the people. Jean Chrétien, the Minister responsible for the North, referred repeatedly to the rapid growth of the Inuit population in various public speeches during the late 1960s and early 1970s(2). For example, he told an audience at a CEGEP in Quebec on 13 February 1971 that one subject that worried the Inuit was 'the fact that their population is double the national average. The traditional balance between game and consumption has been upset by the demographic increase. New means of subsistence must, therefore, be found, as well as new sources of employment.'

The inference in the Minister's speeches and in the writings of others was that the resources on which the Inuit previously depended could no longer support the increasing numbers of people in the North. This was Rowley's (1972:203) point, for example, and he went on to complain that not only had wild life been depleted and resources like the whale exploited, but the environment had been disturbed for mineral exploration and by an increased number of fires in the caribou

winter range. But the crucial point, which Rowley noted but did not stress, was not the increasing numbers of Inuit but their increasing, and now total, concentration in a few settlements.

> Experience with the primitive races in both Canada and Greenland has shown that if the natives are to live off the resources of the country, they must be distributed in small communities over as wide an area as possible. There are few places where the resources are sufficient to support a large population for any length of time, but there are innumerable places where a few families can hunt and obtain a living indefinitely...
>
> Taking the Arctic as a whole, it may be said that there are sufficient food resources to feed the present population, provided means can be devised to distribute the natives over the available, suitable areas and encourage and assist them to preserve their native skills and independence.
>
> (Cantley [1952]:27-28)

No such means were devised. Twenty years later all but a handful of Inuit were living in settlements, in large concentrations which, as Cantley warned, the surrounding country could not support. The solution was to bring food in from outside. Demographic change thus intensified the dependence of the Inuit on the imported foods of the white man.

Two or three years after the population had been induced to move from camps to settlements by the sudden all-out push for one hundred per cent school attendance, by Family Allowances, wage employment and social services Schaefer (1964)

found in settlement after settlement that haemoglobin levels plunged drastically and iron-deficiency anaemia became prevalent in the most sensitive age and sex groups: the growing children and the women of child-bearing age. This undesirable situation together with the rapidly deteriorating dental health that was observed in Inuit moving from camps to settlements were only the most obvious and objectively the most easily measured consequences of this move. More difficult to measure were idleness, frustration, the weakening of social structures and traditional family roles, and eventually alcoholism; but these in the end were much more important and not only worsened the nutritional and general health of the Inuit but threatened their very survival as a society with a distinctive cultural identity.

At first the foods that the new settlement-bound Inuit consumed were confined largely to the non-perishable, easily stored staples: the flour-tea-sugar syndrome that was the bane of northern health officers and nutritionists. But another demographic development in the North changed this: the growth of the non-Inuit population in the 1950s and 1960s. White andministrators, teachers, welfare workers and medical staff, employees in business and industry, technicians, engineers and scientists, military personnel, surveyors: they all poured into the Arctic with the DEW Line, with aviation and tourism, with increased administrative activity by federal and territorial governments. Some towns, like Inuvik and Frobisher Bay, became largely white, not Inuit, settlements. The result was an increasing demand for the standard foods of southern

Canadians which the developing technology of refrigeration and transportation was able to make economically accessible. The trading post store became the Bay or Co-op supermarket, and the array of foods, including those exotic even to southern Canadians, grew rapidly to meet the demand not of the Inuit population but of the white ethnic enclaves. At the same time growth of wage employment among the Inuit, which the increased white presence signified, gave the Inuit the purchasing power to indulge their dietary whims.

The tendency among the Inuit to buy increasing quantities of imported white man's food has been accelerated by another demographic factor: the large proportion of young people in the Inuit population. The extremely youthful age structure of the Inuit population, with more than half of the total being under 17 years of age, is a well-attested fact (Freeman 1971; Rowley 1972; Duffy 1977). This predominance of young people represents not only the statistical demographic majority but the educated majority. The young have been that dominant section of Inuit society most completely exposed to the cultural system of southern Canada and most susceptible to its perceived attractions. These include the foods and the eating patterns of the white men, especially those seen on television and in magazines. As these young Inuit become parents in increasing numbers they are setting up house as the white people do and stocking the domestic refrigerators with more and more purchases of the white people's foods. Their children will grow up within the food consumption tradition more of southern than of northern Canada.

One aspect of the southern Canadian food consumption tradition that appeared with the growing number of southern Canadians in the Arctic was the restaurant or coffee shop. These establishments appeared in centres with a large white population, like Frobisher Bay or Churchill. The notorious Torchy's Cafe at Churchill was destroyed by fire in 1959. Rita Cavia, who learned the business at Torchy's, moved with her husband Arloo to Rankin Inlet and opened another cafe in a convenient location behind the government office building(3). For the first few days the customers were mostly white Canadians, but the Inuit people gradually moved in and were served the regular though restricted bill of fare of similar establishments in southern Canada. Tea, coffee, hot and cold chocolate, fruit cordials, fuit and vegetable juices and oranges were available along with hamburgers and hot dogs, sandwiches, soup and beans, canned meats and fish, potatoes and tinned vegetables, home-made cakes and biscuits. A white government observer noted that the Inuit appeared to have a 'definite preference' for coffee and that they seemed to prefer hot chocolate served with melted marshmallows much more than tea (Ibid). Since the late 1950s cafes of some description have become a regular feature of many of the arctic settlements, especially if there is a sizeable proportion of white residents.

Institutions of another kind sprang up in the later 1950s in the major arctic settlements. These were welfare institutions designed to care for the aged, the infirm, the transients migrating from camp to settlement, or settlement to settlement, in search of work, and for that once large

segment of the Inuit population who were returning from as much as two years in southern sanatoria and who needed a period of rehabilitation before resuming life in the North. By the end of 1956 a thousand Inuit, nearly one tenth of the total Inuit population in Canada, were receiving treatment for tuberculosis in the south(4). Two years later a rehabilitation centre was opened in Frobisher Bay, followed in the summer of 1960 by another at Rankin Inlet and in 1961 by a third at Inuvik(5). Even when discharged from hospital an estimated one in five tuberculosis patients would not be fit for work; they and their families would probably be a charge on welfare funds for the rest of their lives(6). For those who did not have to go south for treatment there were hospitals at Inuvik and Frobisher Bay by the early 1960s and mission hospitals at Aklavik, Chesterfield Inlet and Pangnirtung. Nursing stations were eventually provided at all settlements with more than 100 inhabitants and there were multi-purpose institutions like the Chesterfield Inlet Home for the Aged and and Infirm, owned and operated by the Roman Catholic Mission, and the Transit Centre at Frobisher Bay, owned and operated by the Department of Northern Affairs.

Institutional care of one form or another, all of it involving residence for varying periods of time, were an established feature of arctic settlements by the 1960s. During their stay in institutions Inuit of all ages, and in the case of rehabilitation centres their families as well, were fed on white food and educated to accept white food. 'The cook has found difficulty in persuading the Eskimo people

to eat more vegetables,' the Regional Administrator at Frobisher Bay wrote with reference to the Rehabilitation Centre and in particular to the Children's Receiving Home. But eventually his efforts began to show success, though the Inuit did have 'a reticence to eating potatoes'(7). The children and the adults ate plenty of meat, favouring first poultry, then beef or elk, and finally the other meats like lamb, pork and veal. They did not care for canned meats, probably because of the high seasoning used in their preparation. The children went for pies, cakes and fruit. The cook encouraged them to eat custards and milk puddings in various flavours, but the children did not eat them and serving them was a waste of money. Plenty of milk was available and in addition the cook saw to it that all the children and many of the adults took vitamin tablets every day. The experience was educational for the Inuit. The Regional Administrator at Frobisher Bay wrote about the Rehabilitation Centre in 1963: 'To our knowledge the Eskimo people who eat there eat better meals than they ever receive at home. The meals are balanced and seem adequate. The children in the Receiving Home usually gain weight and they are rarely ill'(8). Though the impact of institutional care on Inuit food habits has never been assessed, there is no doubt that it was considerable in view of the numbers of Inuit involved and the length of time that many of them spent in such care.

5.4 Economic factors

In traditional Inuit society the major form of economic activity was food sharing. In an environment like that of the Arctic, where food procurement was usually unpredictable and unreliable, means had to be found whereby everyone could be sure of obtaining something to eat as long as there was something to eat in camp. The hunter who brought back game on one day might not be so lucky on the next several days and the unlucky hunter had always to be sure of getting a portion of the daily catch by others. In other words, food distribution had to be arranged both within the community and over time. Delayed consumption and caching helped to spread the availability of meat over time. Food sharing helped distribute meat equitably within the community.

Food-sharing patterns ranged from the informal gift-giving and occasional or regular commensality to the rigidly structured, community-wide distribution of meat (Balikci 1968:81). The most rigidly structured were the seal-sharing partnerships of the Copper and Netsilik Inuit. Among these groups a seal was cut up into fourteen pieces, each bearing a particular name, and for each part of the seal to be given away the hunter had a particular partner usually chosen for him by his mother in infancy or early boyhood. If all of his partners were in camp the successful hunter received only the skin, entrails and fat of the seal he had killed (Damas 1972:24). This was the most intense form of food sharing. The more abundant the food resources and the stronger and more extensive the ties of

kinship, the less rigid and structured the food-sharing patterns tended to be. This may be why some anthropologists, in contrast to the majority, have tended to play down the importance of food-sharing in the Arctic. Dr D. Leechman of the National Museum of Canada, for example, claims that community 'sharing of the products of hunting and fishing' was not nearly 'as well established a custom' as some appear to imagine(9). 'This aspect of Eskimo social organization has been made much of by people who find it to their advantage to do so or whose convictions it suited, as well as by the writers of fiction.'

With the acculturation of the Inuit the former food-sharing practices broke down beyond the level of the nuclear family. For example, even among those where it was most strongly developed, Balikci (1964:68) comments on the very limited character of sharing and food gift-giving among the contemporary Netsilik of Pelly Bay. 'With few exceptions today, all fish, seals killed with rifles, and caribou are individual property and belong to the successful hunter... In case of need, however, short circuits of gift-giving appear.' Money and imported goods are never shared outside the household, even between the nearest relatives, and father and son will buy their own separate ammunition. On the south coast of Baffin Island Kemp (1971:113) noted that store foods were not stockpiled and not often shared, but country foods were.

Village-wide meals serve to divert a successful hunter's caloric acquisitions

> for the benefit of a group larger than his own household. The meal that follows the arrival of hunters with a freshly killed seal is the most frequent and the most important of these events. It is called alopaya, a term that refers to using one's hands to scoop fresh blood from the open seal carcass. The invitation to participate is shouted by one of the children, and all the villagers gather, the men in one group and the women in another, to eat until they are full. The parts of the seal are apportioned according to the eater's sex. The men start by eating a piece of the liver and the women a piece of the heart. The meat from the front flippers and the first third of the vertebrae and the ribs goes to the women. The men eat from the remaining parts of the seal. This meal, like almost all other Eskimo meals, does not come at any specific time of the day. People eat when they are hungry or, in the case of village-wide meals, when the hunters return. If anything remains at the end of an alopaya meal, the leftovers are divided equally among all the families and can be eaten by either sex.
>
> (Ibid)

It appears that when the Inuit adopted the economic system of the white men by becoming trappers and wage-earners they tended to give up the rather limited economic arrangements of their traditional society. But some sharing behaviour continued. Relief, for example. 'If relief is issued to a camp,' wrote the Medical Officer at Pangnirtung in 1941, 'it is the custom to share it all around and there is seldom enough provision except for one fair meal'.(10) In 1949, during the post-war economic crisis in arctic Quebec, widows were automatically eligible for government assistance, for in the economic conditions then pertaining the District Registrars agreed that no man could afford to

support more than his immediate family. 'Accordingly, each widow is given a monthly ration which, though often shared with other members in the camp, ensures her support'[11] (emphasis added). These cases of relief sharing are, however, quite early in the modern period in the Arctic and may simply be the lingering of the old tradition. There is no evidence of later examples, and it may be that the practice died out with the almost complete involvement of the Inuit in the economic structures of southern Canada that were fully established in the North in the 1950s.

The base for these economic structures had almost been smashed into ruins by the post-war crash in the world market in fine fur. Partly the crash was due to the fickleness of fashion, partly to the development of synthetics, partly to the dumping by the USSR of some 35,000 white fox furs on the European market at $9.00 each[12]. White fox fur, the chief source of earned income for the Inuit, brought in $20.00 a skin in 1946; by 1950 the price had dropped to as little as $3.50[13]. During the same time the cost of guns, ammunition and other essential merchandise and the already high general cost of living in the Arctic had continued a steady rise. The situation was desperate for many Inuit who could no longer earn enough to purchase their needs. Only the timely introduction of Family Allowances and pensions helped to prop up the dangerously shattered economic base in the Arctic. At the height of the economic crisis in 1951, Family Allowances made up most of the income of a 'typical' Inuit

family. Only 28 per cent was earned. The rest came from Family Allowances (31 per cent), government relief (28 per cent), and unrecoverable debt and relief issued by the Hudson's Bay Company (ibid). In the bad economic year of 1950-51 the average per capita income was only $113.06[14]. Although income increased considerably, especially in the comparatively prosperous late 1950s and early 1960s (Anders 1967; Higgins 1968; Kemp 1971) the distribution of wealth was uneven, from year to year, settlement to settlement, family to family, and although some Inuit became well-off (Honigmann 1965:7) the majority remained poor and dependent on various forms of social assistance.

> The hunting industry of eastern Baffin Island has now reached a critical stage where, in almost all cases, income from the sale of native products is not sufficient to cover current operating and depreciation expenses. The difference is made up by basic welfare income and, in some cases, social assistance and wage employment. The industry was able to modernize during a period of high income from seasonal wage employment and increased sealskin prices. Recently, however, the steady decline in the value of furs has resulted in an ever decreasing profit margin for the hunter.
>
> (Anders 1967:96)

There was thus 'enormous variance in the cash earnings of the Eskimos'[15], and the sale of the various food products in northern stores depended on the Inuit's ability to buy. 'If they are well off they buy the most expensive products, otherwise the cheaper items are used'[16]. In other words, better nutrition was tied to wealth in the Arctic as it was

everywhere else in the world. Where income was sporadic and uncertain, poverty put the higher priced and more nutritious foods out of reach, and after 1961 there was no prescribed Family Allowances issues to ensure that at least some good food was obtained. For most Inuit the chief criterion of food choice was not nutritive value but economic value; that is, what filled the belly most for the cheapest price. For many Inuit the answer was candy and other sweet stuff. At a meeting of the Eskimo Affairs Committee in 1961 a health officer reported that the Inuit tended to substitute sugar for other foods. 'With a limited food budget, the housewife unaccustomed to shopping for prepared foods would tend to buy items that could be stretched furthest, and that would best overcome the feeling of hunger. On one of the Eastern Arctic Patrols the steward in charge of the canteen mentioned that he had sold $75.00 worth of chocolate bars in one small settlement'(17).

> One family I know bought 50 cents' worth of candy as the simplest way of satisfying hunger when they were short of money and food just before pay day. This kind of thing is not rare; it is probably due to the traditional Eskimo lack of worry for the future as well as ignorance of food values. Many of the children of the village had candy or gum in their mouths several times a day.
>
> (Yearsley 1960:31)

Those who suffered most from this purely economic approach to food-buying were the children of the poorest families. But even where money was available to buy good

foods there was no guarantee that the children would benefit as much as they should. At Povungnituk, which was a high income area, the children expressed a fondness for frozen fish and seal meat in the local diet, but of the introduced foods they indicated a strong preference for anything sweet(18). 'All too often the children are filled up on candy and soft drinks', and having money to buy as much gum and sweets as they desired reacted on how much good food they ate. Changes in lifestyle in the last ten to fifteen years, wrote Schaefer (1975:7-9) have 'brought snack foods, sweets and pop as the predominant food of all children and teenagers... Sugar consumption in all children, but particularly in adolescents, in the form of sweet drinks, candies, chocolate and sweet biscuits, has reached phenomenal proportions.' Reliance on sweet foods was not confined to children. The RCMPin 1959 reported that among the Inuit of southern Baffin Island a 'large amount of candy is also purchased by these people. Although rich in calorie content, it is feared that this food will have an undesirable effect on the people's teeth'(19). The Zone Director for National Health and Welfare, Dr Alex Williams, told a reporter from Inukshuk in July 1973 that nutrition was poor in Baffin Island and particularly in Frobisher Bay because foods high in protein and in vitamins cost too much(20). 'Many people depend on soft drinks, candy and chips to fill their stomachs,' he said. When Inukshuk asked a health authority in Frobisher Bay what would happen if such foods were banned from town, 'the person replied that some people would starve

to death.'

Economic factors have dominated Inuit food habits in the 1970s, as they have the food habits of the rest of the country. Inflation has been the major social issue of the decade so far in almost the whole western world, and the Canadian North has suffered more than most areas of that world. Increased production and transportation costs, increased feed costs for livestock, increased world demand for foodstuffs, crop failures in many parts of the earth: these are international concerns that now concern the people of the far Canadian Arctic. In one year from July 1972 to July 1973 these and other national and international economic factors brought about a 7.7 per cent increase in food prices(21). The index for fresh vegetables rose by 40 per cent, for fresh fruit by 33 per cent, and for beef by 21 per cent. By the end of the year the government announced that they would raise the welfare food allowances by as much as 50 per cent in some places to cover adequately the steep rise in food prices(22).

The overall problem remained untouched. The Canadian North was isolated geographically from the rest of the country. Not only did transportation costs put up the increasing costs of food even higher, but the time and distance and handling involved increased the incidence of loss, theft, spoilage and damage. Furthermore the transportation costs and the loss and damage in transit were all highest for the perishable foods which, of course, were often the most important in the make-up of a healthy and balanced

diet. To compound a worsening situation was the fact that those most affected by high food costs were those least likely to be able to afford them. Native families in the North tend to be larger than the white, and their income disproportionately lower. It is also a fact that food prices increase with distance from the major population centres as does the proportion of the native people in the population.

The Food Prices Review Board in a report on the cost of food in northern Canada published in January 1976 recommended a subsidy on certain food items like the expensive and nutritious dairy products(23). This would increase their availability in smaller stores that could not pay the prohibitive transportation costs for a wide range of these goods and it would also put them within a price range that would make them affordable by people in the lower income brackets.

High and rising costs were undoubtedly affecting the nutritional intake and food habits of the Inuit. The poorer the Inuit the more their food consumption patterns were altered by the rapidly deteriorating economic situation in the country and in the western world at large. The most nutritious imported foods were those that rising prices put the furthest out of reach of those who needed them. To help counteract this adverse state of affairs a group in Frobisher Bay organized a Thursday night sale where foods ordered from a wholesale firm in Montreal and shipped North at 19 cents a pound were sold at prices cheaper than those at the Hudson's

Bay store[24]. This merely touched the edges of the problem. To get to the core of it one would have to turn away from imported foods and concentrate on country produce. Native foods were not only proven to be more nutritious than the imported, but substantially cheaper. The Frobisher Bay co-op adopted this tactic by hiring hunters to supply its members with fresh meats. But even earlier than this, at the height of the food price crisis in the summer of 1973, thirty or forty hunters went out together from Arctic Bay in order to provide food for the community. They brought back 'enormous numbers' of caribou and distributed meat to every home[20].

It may be that economic factors will bring about a new trend in food habits in the North by reverting more to the older food habits of the traditional Inuit. One cannot expect a full return to the traditional diet of seal meat, fish and caribou, but there is a strong possibility that hunters' co-operatives may be the best answer to the high cost of food and the low standard of nutrition in the North. The success of this trend will depend on finding the requisite number of hunters to bring in the necessary supplies of fresh country meat and on maintaining the numbers of game animals at a level high enough to meet the demand for food and long enough to improve the failing health of the Inuit and sustain them into the foreseeable future.

5.5 Notes and references

(1) Minutes of the Second Meeting of the Committee on Social Adjustment, 27 December 1961 (RG85, Vol. 1911, File NR4/2-8, Pt. 1).

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CHAPTER SIX

SUMMARY AND CONCLUSIONS

This report has attempted to answer three basic questions raised in connection with the food consumption patterns of the Inuit of the Canadian Arctic.

Firstly: what were the traditional food consumption patterns of the Inuit before contact with the cultural systems of Europe and North America? The answer, obtained from the published and unpublished writings of explorers, anthropologists, police and other government personnel, is that the Inuit in pre- and early post-contact times lived on a diet composed almost entirely of the meat, fat and internal organs of seal, walrus, caribou and fish, supplemented by other meats like whale and polar bear, by sea-birds and eggs, and by a minimal amount of plant foods like berries, willow leaves and seaweeds. The diet varied seasonally and geographically, but was always oriented towards the sea- and land-mammals locally present. Eaten raw or lightly boiled, the animal foods of the Canadian Arctic met all the nutritional requirements of the Inuit.

The second question dealt with in this report asks what changes in food consumption patterns followed from increasing contact with the cultural systems and behaviour of southern Canadians and other non-Inuit people. This is a much more complex question. Cultural changes that affected food habits

in the Arctic began with the coming of the whalemen from Europe and America in the nineteenth century and accelerated in the latter half of the century when the whalers began to winter at stations in both the Western and the Eastern Arctic. Inuit were attracted to the whaling stations, and many worked for the whalemen as hunters or crew, receiving guns, ammunition and food in return. The Inuit passion for tea and biscuits dates to the whaling days, and, to a much lesser degree, the taste for liquor. Legislation introduced early into the Northwest Territories thwarted the growing desire for liquor but could not eradicate it. Throughout the first half of the twentieth century particular groups of Inuit found ways to acquire or manufacture 'alcoholic beverages' and then the government decided to grant to all Inuit the legal right to drink. This suddenly increased the problems of alcoholism in the 1960s and early 1970s, and only voluntary measures voted by the Inuit themselves have eased the situation.

Where alcohol abuse is a social problem with implications for personal health, abuse of tea and biscuits is a personal health problem with implications for society. The widespread acceptance of tea and biscuits was the thin end of a carbohydrate wedge that later developments pounded into the core of the Inuit diet. When the whalers eventually withdrew from arctic waters in the early part of the twentieth century the traders filled the ecological vaccuum they left. Trading companies and individuals employed the Inuit to trap foxes

during the winter months and to trade the furs for food, clothing, guns, ammunition and a wide range of material goods.

The foods traded to the Inuit had to be light, easily transported and non-perishable. The basic was flour. With the advent of baking powder, the Inuit, like most native and white residents of the North, combined it with flour and lard and fried it in seal oil, creating a thick pancake known as bannock. Bannock became a staple, sometimes to the exclusion of all other food, for Inuit who were trapping in poor seal country, or who were having bad luck at the hunting. Many ate bannock by preference as a much more convenient source of food than hunting, without realizing its nutritional deficiencies. Flour, baking powder, lard, tea and molasses became the new staples of arctic living.

Those Inuit who fell on hard times, who had not trapped enough foxes to earn credits for food at the local trading post, or who had had a run of failures on their hunting trips, were issued with relief, either by the trader for whom they trapped or by the local government agent who was usually an RCMP officer, a trader, or later a local welfare officer. Relief issues consisted of the same high carbohydrate rations: in many cases the only non-native foods available, the non-perishable ingredients of the tea and bannock diet. The proteins, minerals and vitamins necessary to maintain health had to come from country food hunted by the Inuit. But in many parts of the Arctic the sources of country food were in decline. In other cases the Inuit

preferred to work for wages or to trap foxes and buy all their foodstuffs from the trading post. Either way, the Inuit were not eating a well-balanced diet and their health was suffering. Those who lived nearest the settlements and who were most dependent on the white man's food were those whose health was most affected by malnourishment and deficiency diseases.

But more and more Inuit were moving towards or into the settlements. Forces were at work that attracted the Inuit in ever-increasing numbers. The presence of the trading post, the RCMPdetachment and the mission provided a nucleus round which settlements could form and expand. The white residents employed in the nuclear institutions needed servants, caretakers, interpreters, odd-job men. For those Inuit who could not support themselves by this kind of employment or by hunting and trapping the trading post or the RCMP station was where they received their relief rations and ammunition. Convenience to these new nodal service centres meant easier and more regular payment. After the Second World War the issue of Family Allowances and other forms of social assistance increased the attraction of the steadily growing settlements. Education facilities and health services added to the attraction, and the housing schemes of the federal government, instituted mainly in response to insanitary settlement conditions and disproportionate morbidity and mortality, heralded the final disappearance of the traditional hunting camp way of life. All but a handful of Inuit in the whole Canadian Arctic were

living permanently in settlements.

The growing nuclear concentration of the Inuit led to difficulties in obtaining country food within the hunting radius of the settlements. The use of the rifle, introduced by the whalemen in the nineteenth century and supplied in increasing numbers by the traders, improved the hunter's ability to kill and was a factor in the decline in numbers of native food animals around the centres of settlement. This was offset to a certain degree by extending the range of hunters through the use of the snowmobile. This now ubiquitous machine proved itself in both the Western and the Eastern Arctic in the 1960s. By that time, however, country foods had become more a supplement to those obtained by purchase from the local store. Most Inuit were earning money, though the amounts earned were generally small and had to be augmented with social assistance payments and relief.

Employment opportunities had multiplied during the years of the Second World War and after a temporary set-back during post-war economic crisis in the North, when military personnel withdrew and the world fur market collapsed, they had soared again with increasing government and commercial activity. Defence, construction, administration, services: all these had provided more and more employment for the Inuit as improving education and better health qualified more of them to take advantage of the available opportunities. The settlements grew larger, the ability of the surrounding country to support the rising numbers with native food sources

diminished rapidly, and the Inuit were totally dependent on imported, store-bought foods. The very high rate of population growth and the escalating cost of living counteracted the economic gains of the late 1950s and 1960s and led to growing employment problems in the 1970s.

Problems in employment mean problems in nutrition. Trading company stores and more recently the southern-style supermarkets in the arctic settlements were stocking a widening range of southern-style foods. The growing proportion of white residents in these settlements provided a market for these foods which the development of sea- and more especially of air-freight services was able to supply at prices which, though much more expensive than in southern cities, were nevertheless affordable by the highly paid white residents and by some of the better-off Inuit. It is ironic, though, that at a time when a virtually limitless range of foods became available in the North the majority of the native northerners could not afford them. The economic inflation of the 1970s put especially the more nutritious foods increasingly out of reach of Inuit customers. The old carbohydrate staples remained as staples: flour, biscuits, tea, augmented now by growing quantities of candy, gum and soft drinks. Malnutrition and many diseases related to the deficiency of essential nutrients dominated the socio-demographic situation in the Canadian North and maintained morbidity, mortality - and especially infant mortality - rates at levels that ranked among the highest in the world.

The children suffered most. Beginning noticeably in

the 1950s Inuit women forsook the traditional methods of infant feeding. Instead of giving breast-milk and supplements of finely chopped or partly chewed portions of lean meat, mothers bottle-fed their infants and gave them supplements of pablum and cereal. Weaning began at an age that lowered rapidly, and solid foods, usually the sugary cereals, were introduced progressively earlier into the baby's regimen. The result was children who grew up with little immunity to disease and greatly reduced powers of resistance to the diseases they did succumb to. Inadequate nutrition, dominated by high carbohydrate intake, continued through childhood and contributed to infant and child mortality that was a disgrace to a prosperous western nation like Canada. As late as 1963, by the government's own statistics, the average age at death among the Inuit was 15.05 years (Canada, Department of National Health and Welfare 1963). Almost one half of Inuit deaths were of infants under one year old.

All of these developments lead to the third question raised in this report: what were the attitudes of those responsible for northern administration to the changes in dietary habits outlined above and what changes did the Administration itself bring about as a result of official policies initiated in response to awareness of change?

The awareness of change and of the ill effects of change dates back to the early years of the twentieth century. It was observed even before the end of the whaling period that those who were most involved in the white man's way of life

were the most unhealthy. This theme recurs frequently in reports from the Arctic, but there was little the government could do. They had little effective control over the practices of the trading companies. They could not force the Inuit by legislation to eat only traditional country foods and had no alternative to offer even if they could have legislatively turned back the clock to pre-contact times. The limitations of transportation and storage compelled the government to ship into the Arctic exactly the same high carbohydrate foods that the trading companies were supplying, with the addition of some supplies of dried buffalo meat. Government relief issues and the food given to the Inuit in part payment for government-sponsored wage-employment were restricted to the familiar and nutritionally inadequate combination of flour, baking powder, biscuits, tea, molasses and occasionally rolled oats. Government nutritionists attempted to fortify bannock mix and biscuits, but the Inuit rejected the former on account of cost and the latter on account of taste.

When the Inuit became entitled to Family Allowances after the Second World War the government seized the opportunity to enforce better eating habits by publishing an authorized list of foods and other goods from which Family Allowances credits had to be chosen. Milk, pablum, eggs and other nutritious foods appeared on the list and many Inuit developed a taste for them. But sometimes stores ran short of these prescribed foods, or the Inuit would demand issues of flour and sugar which would feed the whole family for a

longer time. Amounts of these foods had to be limited, and government agents had to keep a check on issue vouchers to ensure that flour and sugar were not given out in too large quantities at the expense of the more nutritious foods. But the good influence of Family Allowances waned after 1961 when the issue of credit vouchers ceased and the Administration changed to a policy of payment by cheque. The Inuit were thus free to purchase foods on economic rather than nutritional criteria. This meant those foods that would satisfy hunger for the cheapest price: that is, carbohydrates and candies.

The Administration's response was to try to educate the Inuit in wise food-buying and improved planning and preparation of meals. Vocational training courses in home-making were organized in centres right across the Arctic, co-ordinated by the government's own home economics experts. These courses met with only qualified success and it is still too early to assess their overall effect on the eating habits of the Inuit. The feeling that comes across from the vocational training course reports is that some good was achieved in introducing new foods to Inuit mothers and instructing them in their proper methods of preparation. But changes in eating habits take time. The improvement in literacy that began in the 1960s as a result of government education policies will also have an effect in making nutritional education available to a wider audience through government publications and newspapers. The main counter to these developments is the competition of commercial

of commercial advertizing in the press and on television for the less desirable products of the food industry and supermarket chains.

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