



ADVENTURES IN DIET

PART I

BY VILHJALMUR STEFANSSON

IN 1906 I went to the Arctic with the food tastes and beliefs of the average American. By 1918, after eleven years as an Eskimo among Eskimos, I had learned things which caused me to shed most of those beliefs. Ten years later I began to realize that what I had learned was going to influence materially the sciences of medicine and dietetics. However, what finally impressed the scientists, and converted many during the last two or three years, was a series of confirmatory experiments upon myself and a colleague performed at Bellevue Hospital, New York City, under the supervision of a committee representing several universities and other scientific organizations.

Not so long ago the following dietetic beliefs were common: To be healthy you need a varied diet, composed of elements from both the animal and vegetable kingdoms. You got tired of and eventually felt a revulsion against things if you had to eat them often. This latter belief was supported by stories of people who through force of circumstances had been compelled, for instance, to live for two weeks on sardines and crackers and who, according to the stories, had sworn that so long as they lived they never would touch sardines again. The Southerners had it that nobody can eat a quail a day for thirty days.

There were subsidiary dietetic views.

It was desirable to eat fruits and vegetables, including nuts and coarse grains. The less meat you ate the better for you. If you ate a good deal of it you would develop rheumatism, hardening of the arteries, and high blood pressure, with a tendency to breakdown of the kidneys—in short, premature old age. An extreme variant had it that you would live more healthily, happily, and longer if you became a vegetarian.

Specifically it was believed, when our field studies began, that without vegetables in your diet you would develop scurvy. It was a "known fact" that sailors, miners, and explorers frequently died of scurvy "because they did not have vegetables and fruits." This was long before Vitamin C was publicized.

The addition of salt to food was considered either to promote health or to be necessary for health. This was proved by various yarns, such as that African tribes make war on one another to get salt; that minor campaigns of the American Civil War were focussed on salt mines; and that all herbivorous animals are ravenous for salt. I do not remember seeing a critical appendix to any of these views, suggesting, for instance, that negro tribes also make war about things which no one ever said were biological essentials of life; that tobacco was a factor in Civil War campaigns without

being a dietetic essential; and that members of the deer family in Maine, which never have salt or show desire for it, are about as healthy as those of Montana which devour quantities of it and are forever seeking more.

A belief I was destined to find crucial in my Arctic work, making the difference between success and failure, life and death, was the view that man cannot live on meat alone. The few doctors and dietitians who thought you could were considered unorthodox, if not charlatans. The arguments ranged from metaphysics to chemistry: Man was not intended to be carnivorous—you knew that from examining his teeth, his stomach, and the account of him in the Bible. As mentioned, he would get scurvy if he had no vegetables, and there are no vegetables in meat. The kidneys would be ruined by overwork. There would be protein poisoning and, in general, hell to pay.

With these views in my head and, deplorably, a number of others like them, I resigned my position as assistant instructor in anthropology at Harvard to become anthropologist of a polar expedition. Through circumstances and accidents which are not a part of the story, I found myself that autumn the guest of the Mackenzie River Eskimos.

The Hudson's Bay Company, whose most northerly post was at Fort Macpherson two hundred miles to the south, had had little influence on the Eskimos during more than half a century; for it was only some of them who made annual visits to the trading post; and then they purchased no food but only tea, tobacco, ammunition, and things of that sort. But in 1889 the whaling fleet had begun to cultivate these waters and for fifteen years there had been close association with sometimes as many as a dozen ships and four to five hundred men wintering at

Herschel Island, just to the west of the delta. During this time a few of the Eskimos had learned some English, and perhaps one in ten of them had grown to a certain extent fond of white men's foods.

But now the whaling fleet was gone because the bottom had dropped out of the whalebone market, and the district faced an old-time winter of fish and water. The game, which might have supplemented the fish some years earlier, had been exterminated or driven away by the intensive hunting that supplied meat to the whaling fleet. There was a little tea, but not nearly enough to see the Eskimos through the winter—this was the only element of the white man's dietary of which they were really fond and the lack of which would worry them. So I was facing a winter of fish without tea, for the least I could do, an uninvited guest, was to pretend a dislike for it.

The issue of fish and water against fish and tea was, in any case, to me six against half a dozen. For I had had a prejudice against fish all my life. I had nibbled at it perhaps once or twice a year at course dinners, always deciding that it was as bad as I thought. This was pure psychology of course, but I did not realize it.

I was in a measure adopted into an Eskimo family the head of which knew English. He had grown up as a cabin boy on a whaling ship and was called Roxy, though his name was Memormanna. It was early September, we were living in tents, the days were hot, but it had begun to freeze during the nights, which were now dark for six or eight hours.

The community of three or four families, fifteen or twenty individuals, was engaged in fishing. With long poles, three or four nets were shoved out from the beach about one hundred yards apart. When the last net was

out the first would be pulled in, with anything from dozens to hundreds of fish, mostly ranging in weight from one to three pounds, and including some beautiful salmon trout. From knowledge of other white men, the Eskimos considered these to be most suitable for me and would cook them specially, roasting them against the fire. They themselves ate boiled fish.

Trying to develop an appetite, my habit was to get up soon after daylight, say four o'clock, shoulder my rifle, and go off breakfastless on a hunt south across the rolling prairie, though I scarcely expected to find any game. About the middle of the afternoon I would return to camp. Children at play usually saw me coming and reported to Roxy's wife, who would then put a fresh salmon trout to roast. When I got home I would nibble at it and write in my diary what a terrible time I was having.

Against my expectation, and almost against my will, I was beginning to like the baked salmon trout when one day of perhaps the second week I arrived home without the children having seen me coming. There was no baked fish ready but the camp was sitting round troughs of boiled fish. I joined them and, to my surprise, liked it better than the baked. Thereafter the special cooking ceased and I ate boiled fish with the Eskimos.

II

By midwinter I had left my cabin-boy host and, for the purposes of anthropological study, was living with a less sophisticated family at the eastern edge of the Mackenzie delta. Our dwelling was a house of wood and earth, heated and lighted with Eskimo-style lamps. They burned seal or whale oil, mostly white whale from a hunt of the previous spring when the

fat had been stored in bags and preserved, although the lean meat had been eaten. Our winter cooking, however, was not done over the lamps but on a sheet-iron stove which had been obtained from whalers. There were twenty-three of us living in one room, and there were sometimes as many as ten visitors. The floor was then so completely covered with sleepers that the stove had to be suspended from the ceiling. The temperature at night was round 60° F. The ventilation was excellent through cold air coming up slowly from below by way of a trap door that was never closed and the heated air going out by a ventilator in the roof.

Everyone slept completely naked—no pajamas or night shirts. We used cotton or woolen blankets which had been obtained from the whalers and from the Hudson's Bay Company.

In the morning, about seven o'clock, winter-caught fish, frozen so hard that they would break like glass, were brought in to lie on the floor till they began to soften a little. One of the women would pinch them every now and then until, when she found her finger indented them slightly, she would begin preparations for breakfast. First she cut off the heads and put them aside to be boiled for the children in the afternoon (Eskimos are fond of children, and heads are considered the best part of the fish). Next best are the tails, which are cut off and saved for the children also. The woman would then slit the skin along the back and also along the belly and, getting hold with her teeth, would strip the fish somewhat as we peel a banana, only sideways where we peel bananas endways.

Thus prepared, the fish were put on dishes and passed around. Each of us took one and gnawed it about as an American does corn on the cob. An American leaves the cob; similarly, we

ate the flesh from the outside of the fish, not touching the entrails. When we had eaten as much as we chose, we put the rest on a tray for dog feed.

After breakfast all the men and about half the women would go fishing, the rest of the women staying at home to keep house. About eleven o'clock we came back for a second meal of frozen fish just like the breakfast. At about four in the afternoon the working day was over and we came home to a meal of hot boiled fish.

Also we came home to a dwelling so heated by the cooking that the temperature would range from 85° to 100° F. or perhaps even higher—more like our idea of a Turkish bath than of a warm room. Streams of perspiration would run down our bodies, and the children were kept busy going back and forth with dippers of cold water, of which we naturally drank great quantities.

Just before going to sleep we would have a cold snack of fish that had been left over from dinner. Then we slept seven or eight hours and the routine of the day began once more.

After some three months as a guest of the Eskimos I had acquired most of their food tastes. I had come to agree that fish is better boiled than cooked any other way, and that the heads (which we occasionally shared with the children) were the best part of the fish. I no longer desired variety in the cooking, such as occasional baking—I preferred it always boiled if it was cooked. I had become as fond of raw fish as if I had been a Japanese. I liked fermented (therefore slightly acid) whale oil with my fish as well as ever I liked mixed vinegar and olive oil with a salad. But I still had two reservations against Eskimo practice: I did not eat rotten fish and I longed for salt with my meals.

There were several grades of decayed

fish. The August catch had been protected by logs from animals but not from the heat and was outright rotten. The September catch was mildly decayed. The October and later catches had been frozen immediately and were fresh. There was less of the August fish than of any other and, for that reason among the rest, it was a delicacy—eaten sometimes as a snack between meals, sometimes as a kind of dessert, and always frozen, raw.

In midwinter it occurred to me to philosophize that in our own and foreign lands taste for a mild cheese is somewhat plebeian; it is at least a semi-truth that connoisseurs like their cheeses progressively stronger. The grading applies to meats, as in England where it is common among nobility and gentry to like game and pheasant so high that the average Midwestern American, or even Englishman of a lower class, would call them rotten.

I knew of course that, while it is good form to eat decayed milk products and decayed game, it is very bad form to eat decayed fish. I knew also the view of our populace that there are likely to be "ptomaines" in decaying fish and in the plebeian meats; but it struck me as an improbable extension of class-consciousness that ptomaines would avoid the gentleman's food and attack that of the commoner.

These thoughts led to a summarizing query: If it is almost a mark of social distinction to be able to eat strong cheeses with a straight face and smelly birds with a relish, why is it necessarily a low taste to be fond of decaying fish? On that basis of philosophy, though with several qualms, I tried the rotten fish one day, and, if memory serves, liked it better than my first taste of Camembert. During the next weeks I became fond of rotten fish.

About the fourth month of my first Eskimo winter I was looking forward

to every meal (rotten or fresh), enjoying them, and feeling comfortable when they were over. Still I kept thinking the boiled fish would taste better if only I had salt. From the beginning of my Eskimo residence I had suffered from this lack. On one of the first few days, with the resourcefulness of a Boy Scout, I had decided to make myself some salt, and had boiled sea water until there was left only a scum of brown powder. If I had remembered as vividly my freshman chemistry as I did the books about shipwrecked adventurers, I should have known in advance that the sea contains a great many chemicals besides sodium chloride, among them iodine. The brown scum tasted bitter rather than salty. A better chemist could no doubt have refined the product. I gave it up, partly through the persuasion of my host, the English-speaking Roxy.

The Mackenzie Eskimos, Roxy told me, believe that what is good for grown people is good for children and enjoyed by them as soon as they get used to it. Accordingly they teach the use of tobacco when a child is very young. It then grows to maturity with the idea that you can't get along without tobacco. But, said Roxy, the whalers have told that many whites get along without it, and he had himself seen white men who never use it, while of the few white women, wives of captains, none used tobacco. (This, remember, was in 1906.)

Now Roxy had heard that white people believe salt is good for, and even necessary for, children; so they begin early to add salt to the child's food. That child then would grow up with the same attitude toward salt as an Eskimo has toward tobacco. However, said Roxy, since we Eskimos were mistaken in thinking tobacco so necessary, may it not be that the white men are mistaken about salt? Pursuing

the argument, he concluded that the reason why all Eskimos dislike salted food and all white men like it was not racial but due to custom. You could, then, break the salt habit as easily as the tobacco habit and you would suffer no ill result beyond the mental discomfort of the first few days or weeks.

Roxy did not know, but I did as an anthropologist, that in pre-Columbian times salt was unknown, or the taste of it disliked and the use of it avoided, through much of North and South America. It may possibly be true that the carnivorous Eskimos, in whose language the word salty, *mamaitok*, is synonymous with evil-tasting, disliked salt more intensely than those Indians who were partly herbivorous. Nevertheless, it is clear that the salt habit spread more slowly through the New World from the Europeans than the tobacco habit through Europe from the Indians. Even to-day there are considerable areas, for instance in the Amazon basin, where the natives still abhor salt. Not believing that the races differ in their basic natures, I felt inclined to agree with Roxy that the practice of salting food is with us a social inheritance and the belief in its merits a part of our folklore.

Through this philosophizing I was somewhat reconciled to going without salt, but I was, nevertheless, overjoyed when one day Ovayuak, my new host in the eastern delta, came indoors to say that a dog team was approaching which he believed to be that of Ilavinirk, a man who had worked with whalers and who possessed a can of salt. Sure enough it was Ilavinirk, and he was delighted to give me the salt, a half-pound baking-powder can about half full, which he said he had been carrying around for two or three years, hoping sometime to meet someone who would like it for a present. He seemed almost as pleased to find that I wanted the salt as I was to get it. I

sprinkled some on my boiled fish, enjoyed it tremendously, and wrote in my diary that it was the best meal I had had all winter. Then I put the can under my pillow, in the Eskimo way of keeping small and treasured things. But at the next meal I had almost finished eating before I remembered the salt. Apparently then my longing for it had been what you might call imaginary. I finished without salt, tried it at one or two meals during the next few days, and thereafter left it untouched. When we moved camp the salt remained behind.

After the return of the sun I made a journey of several hundred miles to the ship *Narwhal* which, contrary to our expectations of the late summer, had really come in and wintered at Herschel Island. The captain was George P. Leavitt, of Portland, Maine. For the few days of my visit I enjoyed the excellent New England cooking, but when I left Herschel Island I returned without reluctance to the Eskimo meals of fish and cold water. It seemed to me that, mentally and physically, I had never been in better health in my life.

III

During the first few months of my first year in the Arctic I acquired, though I did not at the time fully realize it, the munitions of fact and experience which have within my own mind defeated those views of dietetics reviewed at the beginning of this article. I could be healthy on a diet of fish and water. The longer I followed it the better I liked it, which meant, at least inferentially and provisionally, that you never become tired of your food if you have only one thing to eat. I did not get scurvy on the fish diet nor learn that any of my fish-eating friends ever had it. Nor was the freedom from scurvy due to the fish being eaten raw—we proved that later. (What it

was due to we shall deal with in the second article of this series.) There were certainly no signs of hardening of the arteries and high blood pressure, of breakdown of the kidneys or of rheumatism.

These months on fish were the beginning of several years during which I lived on an exclusive meat diet. For I count in fish when I speak of living on meat, using "meat" and "meat diet" more as a professor of anthropology than as the editor of a housekeeping magazine. The term in this article and in like scientific discussions refers to a diet from which all things of the vegetable kingdom are absent.

To the best of my estimate then, I have lived in the Arctic for more than five years exclusively on meat and water. (This was not, of course, one five-year stretch, but an aggregate of that much time during ten years.) One member of my expeditions, Storker Storkersen, lived on an exclusive meat diet for about the same length of time, while there are several who have lived on it from one to three years. These have been of many nationalities and of three races—ordinary European whites; natives of the Cape Verde Islands who had a high percentage of negro blood; and natives of the South Sea Islands. Neither from experience with my own men nor from what I have heard of similar cases do I find any racial difference. There are marked individual differences.

The typical method of breaking a party in to a meat diet is that three to five of us leave in midwinter a base camp which has nearly or quite the best type of European mixed diet that money and forethought can provide. The novices have been told that it is possible to live on meat alone. We warn them that it is hard to get used to for the first few weeks, but assure them that eventually they will grow to like it and that any difficulties in

changing diets will be due to their imagination.

These assertions the men will believe to a varying degree. I have a feeling that in the course of breaking in something like twenty individuals two or three young men believed me completely, and that this belief collaborated strongly with their youth and adaptability in making them take readily to the meat.

Usually, I think, the men believe that what I tell of myself is true for me personally, but that I am peculiar, a freak—that a normal person will not react similarly, and that they are going to be normal and have an awful time. Their past experience seems to tell them that if you eat one thing every day you are bound to tire of it. In the back of their minds there is also what they have read and heard about the necessity for a varied diet. They have specific fears of developing the ailments which they have heard of as being caused by meat or prevented by vegetables.

We secure our food in the Arctic by hunting and, in midwinter, there is not enough good hunting light. Accordingly we carry with us from the base camp provisions for several weeks, enough to take us into the long days. During this time, as we travel away from shore, we occasionally kill a seal or a polar bear and eat their meat along with our groceries. Our men like these as an element of a mixed diet as well as you do beef or mutton.

We are not on rations. We eat all we want and we feed the dogs what we think is good for them. When the traveling conditions are right we usually have two big meals a day, morning and evening, but when we are storm-bound or delayed by open water we eat several meals to pass the time away. At the end of four, six, or eight weeks at sea we have used up all our food. We do not try to save a few delicacies

to eat with the seal and bear, for experience has proved that such things are only tantalizing.

Suddenly, then, we are on nothing but seal. For while our food at sea averages ten per cent polar bear, there may be months in which we don't see a bear. The men go at the seal loyally; they are volunteers and, whatever the suffering, they have bargained for it and intend to grin and bear it. For a day or two they eat square meals. Then the appetite begins to flag and they discover, as they had more than half expected, that for them personally it is going to be a hard pull or a failure. Some own up that they can't eat, while others pretend to have good appetites, enlisting the surreptitious help of a dog to dispose of their share. In extreme cases, which are usually those of the middle-aged and conservative, they go two or three days practically or entirely without eating. We had no weighing apparatus; but I take it that some have lost anything from ten to twenty pounds, what with the hard work on empty stomachs. They become gloomy and grouchy and, as I once wrote, "They begin to say to each other, and sometimes to me, things about their judgment in joining a polar expedition that I cannot quote."

But after a few days even the conservatives begin to nibble at the seal meat; after a few more they are eating a good deal of it, rather under protest; and at the end of three or four weeks they are eating square meals, though still talking about their willingness to give a soul or a right arm for this or that. Amusingly, or perhaps instructively, they often long for ham and eggs or corned beef when, according to theory, they ought to be longing for vegetables and fruits. Some of them do hanker particularly for things like sauerkraut or orange juice; but more usually it is hot cakes and syrup or bread and butter.

There are two ways in which to look at an abrupt change of diet—how difficult it is to get used to what you have to eat; and how hard it is to be deprived of things you are used to and like. From the second angle, I take it to be physiologically significant that we have found our people, when deprived, to long equally for things which have been considered necessities of health, such as salt; for things where a drug addiction is considered to be involved, such as tobacco, and for items of that class of so-called staple foods, such as bread.

It has happened on several trips, and with an aggregate of perhaps twenty men, that they have had to break at one time their salt, tobacco, and bread habits. I have frequently tried the experiment of asking which they would prefer: salt for their meat, bread with it, or tobacco for an after-dinner smoke. In nearly every case the men have stopped to consider, nor do I recall that they were ever unanimous.

When we are returning to the ship, after several months on meat and water, I usually say that the steward will have orders to cook separately for each member of the party all he wants of whatever he wants. Especially during the last two or three days there is a great deal of talk among the novices in the party about what the choices are to be. One man wants a big dish of mashed potatoes and gravy; another a gallon of coffee and bread and butter; a third perhaps wants a stack of hot cakes with syrup and butter.

On reaching the ship each does get all he wants of what he wants. The food tastes good, although not quite so superlative as they had imagined. They have said they are going to eat a lot and they do. Then they get indigestion, headache, feel miserable, and within a week, in nine cases out of ten of those who have been on meat six months or over, they are willing to go back to meat again. If a man does not want to take part in a second sledge journey it is usually for a reason other than dislike of meat.

Still, as just implied, the verdict depends on how long you have been on the diet. If at the end of the first ten days our men could have been miraculously rescued from the seal and brought back to their varied foods, most of them would have sworn forever after that they were about to die when rescued, and they would have vowed never to taste seal again—vows which would have been easy to keep, for no doubt in such cases the thought of seal, even years later, would have been accompanied by a feeling of revulsion. If a man has been on meat exclusively for only three or four months he may or may not be reluctant to go back to it again. But if the period has been six months or over, I remember no one who was unwilling to go back to meat. Moreover, those who have gone without vegetables for an aggregate of several years usually thereafter eat a larger percentage of meat than your average citizen, if they can afford it.

Next month Mr. Stefansson will describe the now famous experiments conducted in New York City under the supervision of the Russell Sage Institute of Pathology and a committee of distinguished scientists when he and Karsten Andersen lived for more than a year under average city conditions on an exclusively meat diet.—*The Editors.*