

into the abdominal cavity. It was considered harmless, but as a precautionary measure the abdomen was thoroughly irrigated with boiled water at a temperature between  $110^{\circ}$  and  $115^{\circ}$ . Patient was put to bed in good condition; soon recovered consciousness and appeared unusually bright. Fifteen hours after operation, however, temperature, pulse and respiration began to rise. Symptoms became rapidly worse and patient died January 23d, thirty-nine hours after operation. Autopsy revealed most acute septic poisoning. The poison which occasioned such a violent and general condition must, it is evident, have come in contact with a considerable portion of the peritonæum and wound, and as the contents of the cyst did come in contact with an extensive peritoneal surface, and as this fluid was of a dark-brown color and somewhat suspicious in its appearance, we are almost justified, from these facts alone, in considering it the probable source of infection. It may be well to state in this connection that the usual precautions with respect to all articles and instruments used during operation were taken. On examining the tumor sac after operation, there was found on its inner surface an area several inches in diameter which to all appearances was necrotic in nature. This suspicion was afterward substantiated by the pathological report and the source of poisoning determined.

Here, then, we have positive proof that tumor walls sometimes undergo necrosis, and to such a degree as to render the contents violently poisonous, without occasioning symptoms which would even cause a suspicion of the existing condition.

#### MEDICAL OBSERVATIONS AMONG THE ESQUIMAUX.\*

BY FREDERICK A. COOK, M. D.

Ethnologist to the first Peary North Greenland Expedition.

I wish you would follow me in your imagination to the extreme North, where between the seventy-sixth and seventy-ninth parallels is a race of people called the Esquimaux. These people were called by Sir John Ross "Arctic Highlanders," but as a matter of fact they do not live in the highlands but on the coast. They live in a region of eternal ice and snow, are hemmed in by glaciers, can not therefore

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leave their locality and have no regular communication with other portions of the world.

They have naturally developed a number of habits and customs which are extremely interesting, and they have adapted themselves to the extreme cold of the North. I have with me here a boy who is not a member of the Northern tribe but of the Labrador Esquimaux.

These people live on an absolute meat diet. Two thirds of this meat is raw and frozen and about one third is cooked, because in this way the blood is extracted; this forms their only drink except water. For nine or ten months of the year they are compelled to melt the ice or snow to get water to drink. This is done in a stone dish over a rude lamp in which a piece of moss takes the place of a wick, and some whale blubber serves as oil. They use no sodium chloride or condiments of any kind in their food—an exceedingly interesting fact. You can easily understand from the difficulty they have in obtaining water that they waste none in bathing; in fact, they do not bathe during their whole lives.

The average male is five feet one inch and a half in height, and his average weight is a hundred and thirty-five pounds, while the woman is four feet eight inches in height and has an average weight of a hundred and eighteen pounds. The men wear their hair as long as the women and allow it to drop over their faces to protect them from the extreme cold. By looking at this boy you will notice that the face is of the Mongolian cast. The heavy cheeks are due to their method of tanning skins. The skins are all chewed, then dried, then scraped and then chewed again. They have to chew their boots and shoes about once a week after they are made in order to keep them pliable. The muscular outlines of the body are nearly obliterated from the fact that they have immediately beneath the skin a layer of blubber or areolar tissue which protects them against extreme cold. The least excitement among these people will cause blood to flow freely from their mucous membranes, and a slight cut will bleed for an hour or two, showing that they are blessed with a superabundance of blood.

The girls, soon after birth, are betrothed to certain worthy young men and arrive at a marriageable age at twelve to fourteen years. The young men are usually ten years older and must have shown their ability to catch bears or seals or other Arctic animals. The young man comes to the house of the intended bride and gains permission from the parents to take his girl-wife to his own establishment. She is kept there for a period of three months and is then returned to her

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mother with thanks. As a rule, he is not allowed then to see her for a year, and during this time either he or she may change to another. This is continued for several years until the birth of their first child, which is the only permanent bond of union. Although these girls attain their size early, they do not menstruate until the age of nineteen or twenty years. If a girl proves sterile, there is no marriage and she wanders about from place to place and from man to man.

When a woman is about to give birth to a child she is put in a house and given frozen meat sufficient to last for two weeks and also some blubber and oil. If she survives the ordeal and the baby is heard to cry, the others will come in and help her, but if the baby's cries are not heard, that house will not be entered again. The common impression is that aboriginal women give birth to children easily, but it is not so with these women. Deaths in childbirth are not at all uncommon. From the histories I have obtained I have been led to believe that there are some cases of puerperal peritonitis, and their natural filth would favor such a condition. The umbilical cord is severed with stones and is tied with a piece of dirty sinew.

For the first two years the child wears no clothing, being carried inside of the mother's clothing against her back. It nurses for from four to six years, or usually until she has another child. The average period between each child is four years. If the mother dies before the child is three years old the child must also die, for there is nothing to feed the child upon except meat and they claim the child must die anyway. If the father dies before the child is three years of age the child must be killed, because it will prevent the mother from having another husband. The child is accordingly strangled.

In times of famine the childless women and the old women are turned out to starve, and their bodies are eagerly devoured by the other members of the tribe. This is not cannibalism but a matter of self-preservation. Usually they are not polygamous or polyandrous but their customs do not condemn either, and men can be found with three or four wives as well as women with several husbands. There is no rule among them on this point.

These people live in a region of constant night for four months, followed by a period of part day and part night, and then four months of constant day. This endless night has a peculiar effect on the secretions, and upon the passions. During the whole of this long Arctic night the secretions are diminished and the passions suppressed, resulting in great muscular debility. Our own party suffered in the same way. This peculiar condition is due to the prolonged

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absence of the sun, and I should judge from this that the presence of the sun is essential to animal as it is to vegetable life. The passions of these people are periodical, and their courtship is usually carried on soon after the return of the sun; in fact, at this time they almost tremble from the intensity of their passions and for several weeks most of their time is taken up in gratifying them. Naturally enough, then, the children are usually born at the beginning of the Arctic night, or about nine months from this time. The coldest temperature we experienced during the Arctic night was  $53^{\circ}$  below zero. When we emerged from this night our skins were of a yellowish hue. We ate very little during this absence of the sun and, although feeling sleepy, we did not allow ourselves to sleep more than ten hours each day but occupied ourselves with enforced work and reading. By such measures we avoided scurvy, and after the return of the sun we traveled long distances; yet we did not need any antiscorbutic remedies.

At the conclusion of these remarks the following questions were propounded by the different members of the society: (1) What is the condition of their teeth? (2) Is menstruation continued during the Arctic night? (3) How is paternity of the children determined? (4) How is the prolonged lactation accounted for? Is it because of the use of so much oil or blubber? (5) What are the moral habits of these people—particularly as regards the existence of masturbation? (6) What is the length of the menstrual period during the daylight period?

Dr. Cook replied as follows: Their teeth are in good condition, though short and worn. During the Arctic night the menstrual function is usually suppressed, not more than one woman in ten menstruating. As a rule, the Esquimaux are very faithful, but it occasionally happens among the sterile women that the husband loans her for a period of one child to another individual, and I have known of one instance in which the woman when so exchanged did not prove sterile. The child is the property of the mother and not of the father. They do not consume as much oil as is generally supposed; they eat a good deal of fat as we do cheese, but not as a regular diet. I can not say why lactation continues so long. In our stay of a year and a half I was unable to learn much of masturbation and similar practices, and I do not believe that they are indulged in. In southern Greenland and in parts of Labrador, where the people have learned the use of rum and tobacco and tea and coffee, their morals have suf-

ferred correspondingly and their physique is proportionately impaired. Among the northern tribes they have very little illness except rheumatism, occasionally follicular tonsillitis and mild forms of *la grippe*, whereas farther south not less than fifty per cent. of them have consumption. Every year there is an epidemic of *la grippe* that carries away thousands of the people in southern Greenland and Labrador. They have no system of medical treatment for their diseases. During the period of daylight menstruation recurs about every twenty-eight to thirty days.

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