

For several reasons the survey was concentrated at Norway House. Here information could be obtained on the food supply. Also Indians were available in large numbers for examination at one site because a band is situated around the post and the local Indian hospital provided excellent facilities for the operation of special instruments and cameras.

Although a dietary survey was not conducted, special circumstances provided reliable evidence on the dietary habits of the Indians studied. All of their staple foods are imported and the trading post is the sole source of them. Through the Hudson's Bay Company records were obtained of the food purchased during the year 1941 by several hundred Indians in the area studied. The basic diet was supplemented by a small quantity of berries in season and what fish and game they could obtain.

More than 400 Indians of both sexes and all ages were examined; records were kept on 215. Of the latter number, 187 were seen at Norway House and 28 at God's Lake.

In addition to a search for the advanced stages of nutritional deficiencies, such as kerato-malacia, beri-beri, pellagra, scurvy and rickets, certain tissue changes which have been attributed by one of the authors (H.D.K.) to nutritional deficiencies were sought.^{1 to 6} These changes involve the conjunctivæ, the blood vessels at the corneal scleral junction, the gums and the tongue and have been ascribed by him to avitaminosis A, ariboflavinosis, avitaminosis C, and aniacinosis respectively. Examination was made for gross changes and in approximately half of the subjects the conjunctivæ and the ocular limbic blood vessels were also viewed through a biomicroscope. As a basis of appraising thiamine status an abridged neurological examination included: palpation of calf muscles; tests for triceps and patellar reflexes and vibratory sense.

Considerable difference of opinion exists concerning the specificity of these signs but most workers agree that they are found with greater frequency among malnourished than well nourished population groups.

RESULTS

Available food supply.—The food purchased by the Indians in the Norway House area is recorded in Table II. It is to be noted that of the 1,470 calories purchased per person per day, no less than 1,258, or 85 per cent of the total, were supplied by the white flour, lard, sugar and jam. All these foods are either devoid of or extremely low in vitamins and minerals. A number of the nutritional factors in the foods purchased were calculated. The values are set out in Table III. It is impossible to estimate how much additional food was obtained by fishing and hunting, but due to the depletion of the fish and animals in the area, the amount must have been relatively small.

TABLE III
NUTRIENTS AVAILABLE PER PERSON PER DAY FROM FOOD PURCHASED IN 1941

Nutrient	Amount per person per day in food purchased	Weighted recommended daily allowance per capita calculated for Canada
Calories	1,740	2,544
Protein	34 gm.	66.1 gm.
Fat	40 gm.
Calcium	103 mgm.	960 mgm.
Phosphorus	372 mgm.
Iron	9 mgm.	11.8 mgm.
Vitamin A	238 I.U.	4,590 I.U.
Thiamine	0.35 mgm.	1.45 mgm.
Riboflavin	0.25 mgm.	2.10 mgm.
Niacin	3.8 mgm.	14.5 mgm.
Ascorbic acid	1.0 mgm.	71.3 mgm.