

HEADQUARTERS  
U. S. STRATEGIC BOMBING SURVEY  
(PACIFIC)  
APO 234  
C/O POSTMASTER, SAN FRANCISCO

INTERROGATION NO: 206

PLACE: Room 535,  
Meiji Bldg.

DATE : 1 Nov 1945

Division of Origin: Medical Division

Subject: Food Ration for Japanese Naval Personnel: Incidence  
of Malnutritional diseases among naval personnel.

Personnel interrogated and background of each:

NAGATO, Sadamu, Surgeon commander in the Japanese Navy. Length of Service -- 12 years. Now in charge of Naval Hospital, Tokyo. Dr NAGATO was with the Imperial University in Kyushu, Fukuoka, from April 1941 to October 1942. He was in charge of the Naval Hospital at Somavaya from Nov 42 to July 44, and with the Naval Medical College, Tokyo, from Aug 44 to Sept 45. He is a regular officer. He is not a pilot.

Where interviewed: Room 535, Meiji Bldg.

Interrogator: Maj Robert S. Goodhart; Maj Henry J. Rugo

Interpreter: Mr Hanada, civilian.

Allied officers present: Majs Goodhart & Rugo

Summary:

The Japanese Navy was able to provide full rations up to the last one third of the war. The exact date of reduction of the ration was not known to NAGATO. Reduction in ration applied only to naval personnel stationed in Japan proper. Personnel outside of this area obtained much or all of their food from sources outside of Japan.

The bombing of Japan had a considerable effect upon navy rations, as a large number of warehouses were destroyed. Damage to rice stored in the Tokyo area caused the major part of the shortages due to bombing.

Comdr NAGATO had only general figures on navy rations. The total calory value of the initial ration was 3500 per man per day. The navy was able to obtain this amount up until October 1944. About that time the ration was reduced to 3100 calories (men just entering the navy and undergoing initial training were granted additional rations): however the food actually obtained supplied from 2400 to 2700 calories, or 75 to 85% of the decreased ration.

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The initial basic ration consisted of 720 grams of cereals per man per day (540 grams of rice and 180 grams of barley). The reduced ration provided for 640 grams of cereals (480 grams of rice and 160 grams of barley).

An investigation of naval personnel in Japan during 1944 disclosed that the men's actual requirements ranged from 2600 to 3400 calories, with an average of 3000 calories.

Beri-beri was not of great concern to the navy. Its incidence increased slightly throughout the war until towards the end of the war it accounted for 15% of all the malnutrition cases in naval hospitals. Six thousand severe cases of malnutrition were admitted to naval hospitals during the period from October 1944 to the present date. Total hospital admissions during the same period amounted to 30,000. Thus malnutrition of all types accounted for 20% of all admissions to naval hospitals in Japan.

Comdr Nagato stated that he had examined 417 students of the Naval College in Maizuru, in May 1945, and had found that 30% had malnutrition, including 10% with beri-beri. 4.9% were found to have tuberculosis. None of these students were hospitalized at the time of the examination. All were actively engaged in the full naval training course given at the college.

Comdr Nagato stated that there probably were cases of beri-beri in the navy, in addition to those hospitalized. However, he could furnish no statistical data. Until the war, the navy had kept entirely free of beri-beri. 30% of the bran was removed from the rice used prior to the war. During the war this was reduced to 10%. The navy had strict regulations against the washing of rice.

The following criteria were given by Comdr Nagato for the diagnosis of beri-beri:

1. Changes in tendon reflexes.
2. Skin-hypo-esthesia.
3. Edema.

4. Drop in diastolic blood pressure.
5. Accentuated second pulmonary sound.
6. Rapid heart rate on slight exertion.
7. Enlarged right side of heart.

No skin lesions have been noted. Scotomata are rare and occur only in severe cases.

Pellagra -- No pellagra seen.

Scurvy-- Navy in Hokkaido had some scurvy. The incidence however was insignificant. This statement was based on dispatches that Comdr Nagato had seen and not upon personal observations.

Vitamin A deficiency is rare.

Criteria for the Diagnosis of Malnutrition: (Cases not falling into above classification):

1. 10% to 30% loss of weight. In extreme cases, as much as 50% loss of weight has been observed.
2. Decrease in systolic blood pressure.
3. Decrease in pulse rate.
4. Subnormal temperature.
5. Edema. From 10 to 20% of all cases of malnutrition had edema. This was not due to a lack of protein. The ration of the Japanese Navy provides for 60 grams of protein per man per day, and this total amount has been maintained throughout the war although the intake of meat and fish has been drastically reduced. Nagato considers 8 grams of plasma protein per 100 c.c. of blood to be normal. In these cases of malnutrition, a drop below 7 grams % has rarely been observed, even when edema is present. The cause of the edema is unknown. Nagato believes it is secondary to the decrease in heart size and strength which results from insufficient intake of calories. Autopsy has shown (according to Nagato) that all the internal organs become smaller in calory deprivation. Some Japanese physicians believe that the edema in these cases is due to the lack of certain essential amino acids. Comdr. Nagato does not concur.

Diarrhea-- Present in 30 to 50% of the total cases of malnutrition. Bloody diarrhea occurs rarely, in severe cases only. Physicians not acquainted with this manifestation of malnutrition diagnose the condition as dysentery, which it is not. This has been proven by post mortem examination. The condition is not sprus, nor is it pellagra. Comdr. Nagato thinks it may be due to Niacin deficiency, but their studies of the condition have not progressed sufficiently to be positive about this.

Anemia-- The hemoglobin may drop from 100 to 70%. All cases of malnutrition have some anemia.

The erythrocyte sedimentation rate: The normal sedimentation rate is from 1 to 10 m.m. This rate is increased in all cases of malnutrition (in the absence of tuberculosis or other infection). It may increase to 25 to 50 m.m.

Changes in general appearance: Young men have an aged appearance. Skin turgor becomes poor.

Cold Hands and Feet. This is common and is due entirely to a lack of calories. It is very difficult to get these patients warm.

Inability to absorb and utilize food eaten.

Lack of response to environment. Patients become apathetic and, to varying degrees, insensible to pain.

The Navy supplies Vitamin A and B concentrates to its personnel, as well as tablets containing the vitamin B complex or the vitamin B complex plus vitamin C. Tablets or pills containing vitamin C alone are not supplied.