subsist on the diet of the sledge parties, they became affected with scurvy in even greater numbers than men who had been deprived of these supposed to be favourable conditions, but who endured along with them similar and even the same hardships and severe physical labour, and subsisted on the same diet.

Several of the less important sledge parties suffered privations and encountered obstacles to some extent similar to those of the extended and chief expeditions; but as their journeys were less prolonged, the men who took part in them were not subjected for so long a time to these unfavourable conditions.

Yet although scurvy be "a species of starvation, it differs from ordinary inanition "from want of food" (5249). "The want of food generally, in some conditions, "may happen without scurvy" (4891); "and a dietary deficient only in quantity . . . "might issue in starvation, in consumption, or other wasting malady, it would not "bring on scurvy" (5358). It may likewise be affirmed from the evidence that, so far as our knowledge goes, privation, fatigue, and exposure to extreme cold are not themselves capable of producing the disease (4994, 5191, 9349–9354), however much they may favour its development.

The appearance of the disease during the sledge journeys of the recent expedition cannot be accounted for by any of these conditions; and even although it be a disease of mal-nutrition, insufficient nourishment cannot be regarded as the main cause of its production.

Besides the differences now considered between the ship and sledge dietaries, another, however, existed, which was of great importance. The ship dietary provides for a liberal allowance of vegetable food. Preserved vegetables, including potatoes, were issued on board in rations of 8 ounces once or twice a-week, and of 4 ounces four times a-week; compressed vegetables in rations of 1 ounce once or twice a-week; and pippins or bottled fruits in rations of 2 or 6 ounces, respectively, twice a-week; while vegetables were present in several of the tinned meats regularly consumed. There was besides a daily ration of 1 ounce of lime juice, which was increased to 2 ounces on board the "Alert" during the month of March.—(Appendix, Nos. 3 and 10.)

In the sledge dietary, however, the vegetable element, as it has been termed, is represented by only 2 ounces of preserved potato; and the evidence shows that this quantity is an insufficient one. Thus, Dr. Macdonald states, "two ounces of potatoes "would not be enough to my mind" (4907); Dr. De Chaumont, when asked if this quantity is insufficient to ward of scurvy, replied, "I think it was" (5004); Dr. Guy expressed the opinion "that the potato element is decidedly defective" (5339); Dr. Buzzard, that "the item 2 ounces of potato is evidently exceedingly inadequate" (5484); and Dr. Barnes said, "I see only 2 ounces of potatoes was the ration for the sledging "parties; that certainly appears to be insufficient" (7045). Evidence to the same effect was tendered by Dr. Pavy (5216), Mr. Busk (5249), Mr. Leach (5597), Dr. Dickson (5622), and others.

A small quantity of onion powder and curry paste ($\frac{1}{5}$th ounce of each) was also contained in this dietary; but the bread baked on board ship five times a-week was necessarily exchanged for biscuit.

The contrast between the two dietaries in respect to the vegetable, or antiscorbutic, element is further increased by the absence of lime juice from the sledge dietary. This omission must be held accountable for the serious outbreak of scurvy during the sledging season. The evidence and the history of the outbreak point distinctly to this conclusion. Even although there were many conditions favourable to the development of scurvy among those operating upon the sledge parties, none of them can be regarded as necessary antecedents to the disease. The absence or deficiency of the vegetable element in the diet is the only known invariable antecedent;* and lime juice on account of its well established property of supplementing such a deficiency, may confidently be considered an adequate preventive against scurvy. Its reputation, established many years ago, has not been injured, but rather confirmed, by the history of the recent expedition, and by the evidence laid before the Committee. Fifty-eight cases of scurvy out of the sixty in this expedition occurred in men who for longer or shorter periods had been deprived of this antiscorbutic, and, who on account of the exigencies of sledge travelling, had

* This proposition is not disproved by the rare occurrence of scurvy while fresh vegetables of undoubted antiscorbutic power, or even lime juice, is being consumed. It is not sufficient that the vegetable or lime juice be merely swallowed, but the function served by those substances during the process of nutrition must be accomplished. In these exceptional cases, it will generally be found that on account of existing disease, alcoholic indulgence or some other cause, the process of nutrition was not properly performed; and it may legitimately be inferred that the vegetable antiscorbutic or food was not able to exert its ordinary influence upon that process.