constituents of the fresh potato in natural proportion.* It is also agreeable and palatable, and is a conveniently condensed preparation, one part being equivalent to about three-and-a-half parts of fresh potato. The quantity which appears to have been used on board the ships (four ounces four times a-week; 8892, 8919) may be considered a sufficient one, seeing that other vegetables were also used. Advantage would however be derived from a daily in place of an interrupted issue, and this could be effected by adding a ration of two ounces of potatoes to the vegetables issued on the days when potatoes are not issued.

Many fruits, and particularly those of an acescent nature, share with succulent vegetables the valuable property of preventing the scorbutic perversion of nutrition. Accordingly, it may be advisable to provide for the liberal use of such fruits, whether bottled, or preserved dry, or converted into jams or pickles.

The dietetic use of alcohol may be referred to under this subdivision of our subject. It is a significant fact in the history of the recent expedition that the first two cases of scurvy occurred in men who were addicted to an immoderate use of alcohol, and who had not been exposed to the deteriorating conditions that existed during sledge travelling. In the former respect, these men were apparently exceptions in a crew selected because they "were men of very good character, who could scarcely "ever have committed themselves in their long previous career in the Navy" (115). It appears also that in former arctic expeditions, scurvy has occurred in men who indulged in alcohol to excess, while at the same time the disease was not prevalent among the rest of the crew (3500). From the nature of the injurious action on nutrition of alcohol taken in immoderate quantity, it may be assumed that when so used it becomes a powerful predisposing cause of scurvy. There is, however, no conclusive evidence of its materially aiding the development of scurvy when used in moderation. At the same time, it is a remarkable fact that the men employed in the Hudson's Bay Company's service, who rarely drink alcohol in any form, enjoy almost complete immunity from this disease, notwithstanding prolonged exposure to an arctic climate, and fatiguing sledge journeys, which on some occasions have lasted for several months (8701–8875, 6144, 6159). Alcohol was used on board the ships of the recent expedition in the form of rum, and usually in rations of half-a-gill of this spirit. This ration is probably incapable of causing injury to healthy men previously accustomed to the regular use of alcohol. A ration of one gill (5 oz.) of rum, however, continued for several months, in the conditions existing during the winter, would be likely to affect nutrition injuriously, and thereby to become an accessory cause of scurvy. If it be advisable, in the presence of conditions tending to produce mental depression, to use alcohol in arctic service during a period of comparative inaction, the ration should be a very moderate one, and probably not larger than half-a-gill of rum. Advantage would be derived from the substitution of wine, and especially of subacid wines, for spirit of any kind (655, 2102, 2929). Encouragement should also be given to the use of malt liquors in preference to rum or other spirit (655).

These suggestions all tend to favour the one main object of maintaining health at a standard as near the normal as possible, and of thereby ensuring a proper performance of the functions of nutrition. So long as this object is successfully accomplished, it may confidently be anticipated that scurvy will not occur.

If, however, conditions prejudicial to health are permitted to exist, their operation will produce a deterioration of health favourable to the production of scurvy, and that in a degree varying with the kind and intensity of the deteriorating influences. It may, therefore, become necessary, or at any rate advisable, to adopt measures, otherwise superfluous, to oppose these deteriorating conditions; and where experience has shown that their existence specially favours the production of scorbutic disease, the measures adopted should naturally be of the kind most likely to prevent this disease. The chief of these is a modification in the dietary involving an increase of the vegetable element. Vegetable foods, however, contain many substances that are not peculiarly antiscorbutic, and their increase might lead to an inconvenient addition in the quantity of the food. Hence it is that in these circumstances preference is given to vegetable substances that are more *antiscorbutic* than *nutritious*, the chief of which is the juice of the lime or lemon.

As a preventive of scurvy, lime or lemon juice is generally used in Merchant Ships and in the Navy during Polar Service in a ration of one ounce daily, and it is found effectual in this quantity, even during the existence of many conditions favourable to the

* Dr. Attfield's Report, p. xlvii; also Dr. De Chaumont's Analysis, Appendix No. 23.