

"or eleven days after their leaving the ship, my opinion is that they were scorbutic before they left" (4689); "I think that these men, when they started on the sledging expeditions, were already scorbutic" (5454); "The circumstance, therefore, that in the late expedition, in the sledging parties, the disease made its appearance in some cases within a fortnight, affords to my mind almost conclusive evidence that the men were not really as vigorous as their appearance seemed to indicate" (5249).

In so far as these opinions imply merely that the conditions to which the men were subjected during the winter had produced a deterioration of health conducive to the development of scurvy in common with other diseases, they may be regarded as justified by the general observation of the effect of these and similar conditions. Their justness, however, cannot be so readily assumed when they imply that because the interval between the commencement of the operation of the alleged essential cause of scurvy and the first obvious appearance of the disease was a brief one, therefore the alleged cause could not have been the true cause, but rather that the true cause is to be found among the conditions existing at a more distant period.

It is not, as appears to be assumed, an unprecedented circumstance in the history of scurvy, that cases of the disease should occur within a few days after new conditions, and presumably the effective conditions, had come into operation. In the memorable voyage of Anson round the world, one of the ships of his squadron, the "Centurion," set sail from St. Helens, Isle of Wight, on the 18th of September, 1740; and after a run to Madeira, which occupied an unusually long time, and was accompanied with much sickness from fever, proceeded to the island of St. Catharine, on the coast of Brazil, and thence to St. Julian, on the coast of Patagonia. The time spent in reaching St. Julian was 152 days, the ship having remained for 9 days at Madeira, and for 29 days at St. Catharine. After a stay of 10 days at St. Julian, the crew sailed from that port in good spirits, and as far as can be learned in good health. The next destination was Juan Fernandez, and 105 days was occupied in reaching it. The present interest of the narrative centres in the incidents of those 105 days, which were spent, to quote the words of the narrator, "amid storms, cold, frost, and deluges of water, under unparalleled exposure, fatigue, and privation." "In about 10 days after leaving St. Julian the scurvy began to show itself, and in less than two months it had spread to such a degree that there were few on board free from it."*

The conditions that existed on board the two ships during the winter do not therefore appear to have had any direct causal relationship to the outbreak of scurvy that subsequently occurred; nor, indeed, do they appear to have affected the health of the crews in any distinct or appreciable manner. That some deterioration of health, some interference with nutrition, rendering men more susceptible of disease, did occur however, must be inferred from the very nature of the conditions. This inference receives support from the fact, that during the autumn preceding this winter, sledge expeditions were undertaken, which in some of their conditions resembled those of the subsequent spring and summer, but which nevertheless were not attended with scurvy.

Board Ship Dietary.—Before passing from the consideration of the circumstances existing during the winter, it may be advisable to refer to the dietary then in use. The full reports, prepared by the Commanding Officers of the two ships, contain all the information requisite for forming an opinion of the sufficiency of this dietary. It has already been stated that it was supplemented by the daily issue of at least one ounce of lime juice, and that it was at times modified by the substitution of fresh meat for preserved and salted meat, this modification having taken place more frequently in the "Discovery" than in the "Alert" (Appendix, Nos. 3 and 10).† A large number of the substances mentioned in this dietary have been examined by the Committee, and their quality was found to be in every respect excellent, with the single exception that the salt beef was stated to be oversalted. Several of the foods, also, including the lime juice, have been analysed by the direction of the Committee; and the reports of the eminent chemists who have undertaken this duty have shown that the foods submitted to them are of good quality (pp. xxii—xxx). It is interesting to find that the processes of preservation had in no respects impaired the quality or nutritive value of the moist preserved vegetables, such as the tinned carrots, nor of the dry preserved potatoes (Edwards'). The latter is of special importance, as the antiscorbutic reputation of the potato, in its ordinary form, is great and fully established. The analyses of the dry vegetables, represented by compressed cabbage and compressed mixed vegetables, yields

* Public Health: A Popular Introduction to Sanitary Science. By William A. Guy, M.B., &c. 1874, pp. 154, 156.

† 7950, 8100, 8101, 8189–8222, 8382, 9303.