

one in the conditions frequently existing during sledging. In order to supplement it, therefore, lime juice, in many respects a convenient substitute for fresh vegetable food, should be issued in rations of one ounce daily. The difficulties attending the carriage and use of this and other antiscorbutics will be afterwards considered.

Treatment of Scurvy.—The main principle to be followed in the treatment of scurvy is to supply such food as will, in the circumstances of each case, most rapidly restore the functions of nutrition to a normal state. Experience has shown that this may best be done, and usually in a most striking manner, by the administration of certain foods and food-substitutes, which are conveniently grouped under the name of antiscorbutics. Vegetables such as potatoes and many of the cruciferae, lemons, limes, oranges, and shaddocks, are the most important of this group; but it has also, with good reason, been supposed to include fresh meat and fresh fish.

When the state of the gums prevents the patient from masticating, milk, eggs, soups and broths, calves foot jelly, acid vegetable juices, wine, cyder, beer and the fruits mentioned above, as well as others of a subacid nature, should form the essential part of the treatment; combined with quiet and repose. In the advanced stage of the disease, when the slightest exertion produces fainting, too much precaution cannot be taken to ensure absolute repose and freedom from physical exertion.

Complications must be treated according to their special characters.

Much importance is attached in the evidence to the curative powers of fresh animal food (44, 1090, 1100, 2184, 2974). Among the many opinions that have been expressed on this point, none are more decided than those of Dr. Kane. "Our sick are sinking for want of fresh food. It is the only specific: I dislike the use of this unphilosophical term; but in our case it is the true one."* The influence of this food in preventing scurvy has already been considered; and although the evidence does not show that when cooked and eaten in ordinary quantity, it is antiscorbutic in the sense of being sufficient of itself to prevent scurvy, there can be little doubt that, in whatever form or quantity it be eaten, it is a most valuable agent in the treatment of scurvy. At the same time, it is open to speculation if the manner of cooking may not greatly modify the curative action of meat. Cooking which either abstracts much of the juice or subjects it to the action of the air at a high temperature—as in the case of a mutton chop—no doubt more completely modifies the chemical composition of meat than cooking which permits of the juice remaining in the meat protected from free exposure to the air—as in the case of a properly boiled leg of mutton. Meat cooked according to the latter type may reasonably be expected to exert a more decided curative action in scurvy than meat cooked according to the former type.

Codliver Oil—a raw animal fat—may be included in this class of food; and it seems to have proved beneficial in the treatment of scurvy in the recent expedition (1992).

The use of such raw vegetables as are contained in salads, beetroot, tomatoes, uncooked potatoes in molasses, and the numerous other representatives of the class of the vegetable antiscorbutics should constitute a part of the treatment, so far as circumstances will allow.

The use of Lime Juice and other Antiscorbutics.—The most valuable agents in the prevention and treatment of scurvy, are various fruits belonging to the family of the *aurantiaceæ*, such as the orange, lemon, and lime. Their value was recognised so long ago as the 16th century, when Solomon Albertus, in 1573, recommended their use, and especially the use of their juice; and subsequent writers have given good reasons for supporting his recommendation.† The benefit that has followed the general adoption of this recommendation may be appreciated from the facts that since lime juice was

* Arctic Explorations in Search of Sir John Franklin, London: 1876, p. 290.

† Sir Richard Hawkins, in his Voyage into the South Sea in the year 1593 (edited by C. R. Drinkwater Bethune, Capt., R.N.; London 1847—Printed for the Hakluyt Society.) mentions an outbreak of scurvy among the crew of his ship, and says: "That which I have seene most fruitfull for this sicknesse, is sower oranges and lemmons." (p. 60.)

And again:

"Coming aboard of our shippes, there was great joy amongst my companie; and many, with the sight of the oranges and lemmons, seemed to recover heart. This is a wonderful secret of the power and wisdom of God, that hath hidden so great and unknowne vertue in this fruit, to be a certaine remedie for this infirmittie." (p. 81.)

In Sir James Lancaster's Voyage to the East Indies in the year 1600, the following passage occurs (p. 61): "Thus following on our course, the first of August wee came into the height of thirtie degrees south of the line, at which time wee met the south-west wind, to the great comfort of all our people. For, by this time, very many of our men were fallen sicke of the scurvy in all our shippes, and unless it were in the generall's shippe only, the other three were so weake of men that they could hardly handle the sayles. And the reason why the generall's men stood better in healtie than the men of other shippes was this: he brought to sea with him certaine bottles of the juice of lemmons, which he gave to each one