

1734 *Observationes circa scorbutum ; ejusque indolem, causas, signa, et curam. Auctore Joanne Fred. Backstrom.*

From want of proper attention to the history of the scurvy, its causes have been generally, though wrongfully, supposed to be, cold in northern climates, sea-air, the use of salt meats, &c. : whereas this evil is solely owing to a total abstinence from fresh vegetable food, and greens ; which is alone the true primary cause of the disease. And where persons, either through neglect or necessity, do refrain for a considerable time from eating the fresh fruits of the earth, and greens, no age, no climate or soil are exempted from its attack. Other secondary causes may likewise concur : but recent vegetables are found alone effectual to preserve the body from this malady ; and most speedily to cure it, even in a few days, when the case is not rendered desperate by the patient's being dropsical or consumptive. All which is founded on the following observations.

He remarks, that the scurvy is most frequent among northern nations, and in the coldest countries. There it is not confined to the sea alone, but rages with great violence at land, afflicting both natives and foreigners ; of which the poor seamen left to winter in Greenland, who were all cut off by this distemper, afford a memorable instance. But the opinion of its being produced there by cold, he thinks irreconcilable with the daily experience of its attacking seamen in their voyages to the Indies, even when under the torrid zone.

That it is not peculiar to the sea, the following histories sufficiently evince. During the late siege of Thorn, above 5 or 6000 of the garrison, besides a great number of the inhabitants, died of this distemper ; the surrender of the town being more owing to the havock made by this dreadful calamity, than to the bravery of the besiegers. Upon which he observes,

that, allowing this disease to be most frequent among the northern nations in winter, yet the siege of that place was carried on in the heat of summer ; and the Swedes, the besiegers, a northern nation, kept altogether free from the scurvy. The mischief first attacked chiefly the blockaded Saxon garrison. They being almost all cut off, the inhabitants were at last obliged to do duty upon the walls ; of whom it also destroyed a great number. But no sooner was the siege raised, and the gates of the town open for the admission of vegetables and greens from the country, but the mortality quickly ceased, and the disease at once disappeared.

In the end of the last war with the Turks, when the Imperial army wintered in Hungary, the country having been laid waste about Temeswaer, by the calamities of the preceding war, many thousands of the common soldiers, (but not one officer, as having different diet), were cut off by the scurvy. The physician to that army employed his utmost skill, and the most approved antiscorbutic remedies. Notwithstanding which, the mortality went on increasing during the winter. Unacquainted with the disease, or rather its remedy, he demanded a consultation of the college of physicians at Vienna ; whose prescriptions and advice were of no service. The disease still persisted with increasing virulence until the spring, that the earth was covered with greens and vegetables. And the physician now rejoiced as much in having found out the true cause of this evil, as before he had regretted his unhappy disappointment in the removal of so general and dreadful a calamity.

As some are of opinion, that warm and inland countries are altogether free from this distemper, he gives an account from an officer of a German garrison in Italy, many of whom were cut off by it at a great distance from the sea. The officer himself, an Italian, was miserably afflicted, and given over by his physicians, who were altogether ignorant of his case ; when a German surgeon, by lucky accident passing that

way, rescued him from the jaws of death. He cured him in a few days, to the surprise of his physicians, by ordering his servant to the fields to supply him with green vegetables, especially the *sisymbrium*, which grew thereabouts very plentifully.

The following relation is no less curious. A sailor in the Greenland ships was so over-run and disabled with the scurvy, that his companions put him into a boat, and sent him on shore ; leaving him there to perish, without the least expectation of a recovery. The poor wretch had quite lost the use of his limbs ; he could only crawl about on the ground. This he found covered with a plant, which he, continually grazing like a beast of the field, plucked up with his teeth. In a short time he was by this means perfectly recovered ; and, upon his return home, it was found to have been the herb scurvy grass.

From all which the author concludes, that as abstinence from recent vegetables is altogether and solely the cause of the distemper, so these alone are its effectual remedies. Accordingly he bestows the epithet of antiscorbutic on all of that class which are wholesome and eatable ; observing Nature every where affords a supply of remedies, even in Greenland, and the most frozen countries. There no sooner the snow melts from the rivers, but their borders are covered with brooklime, cresses, and scurvygrass, in ample prodigality. There Nature dictates to those barbarous nations, that what she thus blesses them with in such bounteous profusion, affords present health and relief in their malady. This all physicians acquainted with the nature of the scurvy, must be likewise sensible of. The most common herbs and fresh fruits excel the most pompous pharmaceutical preparations, especially those of the animal and mineral kinds. He divides antiscorbutics into three classes. The first contains the common pot-herbs, and all plants of an insipid, or rather sweetish taste, fruits of trees, &c. of this quality ; and when in want of those, even grass itself may be eat. In the second class, he ranks all vege-

tables, roots, fruits, berries, &c. that are of a sub-acid or acid taste : and these being of a middling quality betwixt the insipid plants of the first class, and the stronger bitters he includes in the third, they will prove more effectual than the first, without being liable to some inconveniences which may attend those of the third class. In this last he comprehends all fresh herbs, roots, and fruits, of a bitter and strong taste, of the nature of scurvygrass, cresses, &c. These last are with caution to be prescribed at first, or in great quantities. For prevention, he recommends living much upon green vegetables, when they can be got; otherwise, upon preserved fruits, herbs, roots, &c. He advises seamen when at land to be more careful of laying up a store of greens than of flesh ; and, in case of necessity, would have them when at sea to make trial of the sea-weeds that grow upon the ship's bottom ; being persuaded, that the great physician of nature had not left them without a remedy, although he had never heard of its being tried.¹ After a long abstinence from vegetables, the diseased are to begin with the milder antiscorbutics, proceeding by degrees to those of a stronger nature. In examining the mineral and fossil remedies, which have been so much recommended in the scurvy, he observes of nitre, that as-it is a copious ingredient in most plants, perhaps it may be serviceable ; but, otherwise, all of those classes are to be avoided. He condemns the use of steel, mercury, and alum ; as likewise sulphureous and vitriolic medicines, especially the strong acid of vitriol, which some account a specific in the scurvy ; but they will find themselves disappointed.

¹ I am informed they were tried in Lord Anson's ship.

A TREATISE OF THE SCURVY

IN THREE PARTS

*Containing an inquiry into the Nature, Causes,
and Cure, of that Disease
together with a Critical and Chronological View
of what has been published
on the subject*

BY

JAMES LIND, M.D.

Fellow of the Royal College of Physicians
in Edinburgh

EDINBURGH

PRINTED BY SANDS, MURRAY, AND COCHRAN
FOR A. MILLAR, IN THE STRAND, LONDON

MDCCLIII

LIND'S TREATISE ON SCURVY

*A Bicentenary Volume
containing a reprint of the First Edition of
A TREATISE OF THE SCURVY
by James Lind, M.D.
with Additional Notes*

EDITED BY

C. P. STEWART, PH.D., D.SC.

AND

DOUGLAS GUTHRIE, M.D., F.R.C.S.E

EDINBURGH
AT THE UNIVERSITY PRESS

1953

CONTENTS

	PAGE
EDITORS' FOREWORD	V
A TREATISE OF THE SCURVY BY JAMES LIND, M.D.	
Preface	5
PART I	
CHAP.	
I A critical history of the different accounts of this disease	11
II. Of its several divisions, viz. into scurvies cold and hot, acid and alkaline, &c.	38
III. Of the distinction commonly made into a land and sea scurvy	52
IV. Of the scurvy being connate, hereditary, and infectious	64
PART II	
I. The true causes of the disease, from observations made upon it, both at sea and land	69
II. The diagnostics, or signs	113
III. The prognostics	133
IV. The <i>prophylaxis</i> , or means of preventing this disease, especially at sea	137
V. The cure of the disease, and its symptoms	178
VI. The theory	201
VII. Dissections	227
VIII. The nature of the symptoms, explained and deduced from the foregoing theory and dissections	232

PART III

CHAP.		PAGE
I.	Passages in ancient authors, supposed to refer to this disease; together with the first accounts of it	249
II.	<i>Bibliotheca scorbutica</i> : or, A chronological view of what has hitherto been published on the scurvy	262
	Appendix	349
	A Chronological Index of Authors	352
	An Alphabetical Index of Authors, &c.	355

ADDITIONAL NOTES—BIOGRAPHICAL
AND TECHNICAL

I.	The Third Edition of the <i>Treatise</i> By C. P. Stewart, PH.D., D.SC., Reader in Clinical Chemistry, University of Edinburgh	361
II.	The Lind Tradition in the Royal Naval Medical Service By Surgeon Vice-Admiral Sir Sheldon F. Dudley, K.C.B., M.D., F.R.C.P., F.R.C.S.E., F.R.S., Medical Director-General of the Royal Navy, 1941-5	369
III.	James Lind and Some of His Contemporaries By Douglas Guthrie, M.D., F.R.C.S.E., Lecturer in History of Medicine, University of Edinburgh, and A. P. Meiklejohn, M.A., B.SC., D.M., M.R.C.P., Senior Lecturer in Nutrition, University of Edinburgh	387
IV.	Scurvy in the Nineteenth Century and After By C. P. Stewart	404
V.	The Chemistry of Vitamin-C By E. L. Hirst, M.A., D.SC., LL.D., F.R.S., Professor of Organic Chemistry, University of Edinburgh	413
VI.	The Role of Ascorbic Acid in the Human Body By A. P. Meiklejohn, C. P. Stewart, and R. Passmore, M.A., D.M., Senior Lecturer in Physiology, University of Edinburgh	425

ILLUSTRATIONS

JAMES LIND, M.D.

Frontispiece

From an engraving by I. Wright from a painting by Sir George Chalmers, Bart. (1783). The engraving forms the Frontispiece to the copy of Lind's *Essay on Diseases incidental to Europeans in Hot Climates* in the library of Haslar Hospital. The signature is from Lind's letter to Sir Alexander Dick.

FACING PAGE

TITLE-PAGE OF THE FIRST EDITION i

H.M.S. *SALISBURY* 359

LETTER FROM JAMES LIND TO SIR ALEXANDER DICK 391

In this letter, dated 18th May 1758, Lind resigns the Treasurership of the Royal College of Physicians of Edinburgh on his appointment as Physician to Haslar Hospital.

GENEALOGY OF JAMES LIND

PAGE
388