up between "land scurvy" and "sea scurvy," and was perfectly definite about the primary cause, namely, a deficiency of fresh vegetables in the diet.

Rickets is dealt with in Chapters VIII (seventeenth century) and XV (eighteenth century). In the former there is not only a discussion of current theories regarding the control of bone and tooth formation, but the account of some interesting observations regarding the state of the Englishman's teeth, from skeletons collected in the vaults of St. Leonard's Church, Hythe, between the approximate dates 1250 and 1650. Approximately half the palates had lost no teeth at the time of death. It will be news to most physiologists to learn that demonstration of the way in which long bones grow and become calcified was first made on chicken bones by Stephen Hales, vicar of Teddington, whom they remember well as the first also to demonstrate the magnitude of arterial blood pressure (in the horse). A remarkable vicar! Rickets apparently was known in England as early as 1620, but became really serious only "with the rapid industrialization of the towns in the forties of the nineteenth century." Cod liver oil came into use in English clinical medicine in the eighteenth century. It formed a considerable article of merchandise thus early in the trade with Newfoundland. The first observation of benefit to "rheumatic" patients from oral administration of the oil was made at Manchester in 1782.

The book is replete with interesting facts, duly documented, regarding dietary practises from Tudor times down. We learn that at Tudor dinners fish usually came after meat, but this was reversed in the seventeenth century and the sequence soup, fish, meat established for all time. (Californians take note.) On the same page (131) with this information is the record of a wedding dinner for seven, which illustrates the preponderance of meat in the Englishman's diet in Stuart times. The cost of each item likewise is given. In the appendix the authors compute from many quantitative records of prescribed allowances for food, presented in the text, the probable composition of the daily dietary per man, inclusive of vitamins in international units. Some of the very old dietaries (fifteenth and sixteenth centuries) exceeded in food value some of the very modern ones, excepting only vitamins C and D.

The book might be criticized from the standpoint of constructional unity and logical sequence, but this would be academic. The authors have chosen the psychological order rather than logical and obviously have written not only for those versed in the science of nutrition but for the lay reader and the antiquarian as well as the medical profession. The reviewer ventures to predict, however, that the first-named group will read "The Englishman's Food" with the greatest relish. Certainly every teacher of nutrition should read it.

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ANTONI VAN LEEUWENHOEK

The Collected Letters of Antoni van Leeuwenhoek. Edited, illustrated and annotated by a committee of Dutch scientists. Part I. 1673–1676. 454 pp., 39 plates, portrait. Amsterdam: Swets and Zeitlinger, Ltd., 1939. 4to, cloth, $12.25 (about); ltd. edition, $27.50 (about).

LEEUWENHOEK'S extensive publications are all excessively rare works in Latin or Dutch, except those in the *Philosophical Transactions* of the Royal Society of London in 1673–1724. Dr. Clifford Dobell's "Antoni van Leeuwenhoek and His Little Animals" has made available an account of this early microscopist and his work, but what he actually wrote and sketched has been inaccessible to the many microscopists, botanists, zoologists, bacteriologists, histologists, physiologists, chemists, crystallographers and physicians who are interested in some or many of his discoveries.

His writings are now to be made accessible in a series of about 20 quarto volumes, edited, illustrated and annotated by a committee of Dutch scientists and printed on facing pages in Dutch and English. The quality of the work and the success of the enterprise are ensured by the sponsorship of the Royal Dutch Academy of Sciences, whose Mathematical and Physical Section finances the project, and the Dutch Society of Physicians, publishers of *Het Nederlandsch Tijdschrift voor Geneeskunde,* in whose office the work is prepared by a large committee of representative Dutch scientists under the editorship of Professor G. C. Heringa, professor of histology in the University of Amsterdam.

The efforts of the committee have succeeded beyond expectation in locating the original "letters" of Leeuwenhoek and his correspondence with Huygens, Leibnitz and Magliabechi. It has been discovered that the letters published by the Royal Society were not always complete or correct. This edition will therefore publish the letters in full in Leeuwenhoek's own language and parallel them in a correct English translation. The illustrations will be made whenever possible from Leeuwenhoek's own original sketches in red chalk.

Supplementing these factual originals there will be interpretive comment clarifying Leeuwenhoek's obscure and tangled sentences and modern illustrations of objects he discovered prepared by competent specialists. By these scholarly aids the modern reader can arrive at a more complete understanding of the nature and extent of Leeuwenhoek's observations. Furthermore, some of Leeuwenhoek's seemingly child-

ish comments are to be elucidated in the light of philosophic systems and physical doctrines of his own day.

In order that the true extent of Leeuwenhoek's discoveries may be appreciated competent specialists will add critical notes on contemporary writings and backgrounds in scientific, historical and cultural fields. Thus Leeuwenhoek and his contradictors will be seen in the frame of their own day and society. Each volume will have a list of illustrations, indices of objects investigated and persons named by Leeuwenhoek or referred to by the commentators and annotators and a bibliography of all pertinent books and writings. Portraits of Leeuwenhoek and of persons concerned with his writings and a reproduction of a page of his manuscript will also be included. The concluding volume will contain a life of Leeuwenhoek and critical estimates of his achievements in various fields.

Volume I of the series contains his letters, 1 to 21 inclusive, written in the years 1673–1676 with details of his discoveries on a great assortment of objects ranging from a body louse to tobacco smoke on glass, from human red blood cells to a cat's whiskers and a crystal of rock salt to the smoke of arsenic. The biographical register has brief lives of 53 contemporaries and predecessors from Archimedes to Vesalius. The illustrations fill 39 plates. Their adequacy appears in the fact that Leeuwenhoek's figure of the body louse is supplemented by that of Redi (1671) and Hooke (1665). The frontispiece is the portrait of Leeuwenhoek from the painting by Johannes Verkolje dated 1686, in the Royal Museum of Amsterdam. There is also a portrait of Regnier de Graaf after Watelet and a series of figures of Leeuwenhoek's microscopes.

This is an indispensable work for every scientific library and a great addition to the literature of the history of science. The whole enterprise is a splendid example of cooperative effort in the field of the history of science, demonstrating the critical and permanent values and the stimulus to scholarly effort arising from such an enterprise.

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REPORTS

MEMBERSHIP OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The American Association for the Advancement of Science was organized in 1848 with an initial membership of 461, and its first meeting was held in Philadelphia on September 20. Although the association is now nearly 100 years old, there are two other American scientific societies which were organized much earlier, the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge (to give it its full name) and the American Academy of Arts and Sciences, of Boston, Mass. The American Philosophical Society, which was incorporated on March 15, 1780, grew out of Benjamin Franklin's club, called the Junto, which was started in 1727. The American Academy of Arts and Sciences was granted a charter from the Commonwealth of Massachusetts on May 4, 1780.

For the first 50 years after its organization the membership of the association grew slowly, the number of members by decades until 1898 being as follows:

Year	Membership	Meeting Place
1848	461	Philadelphia
1858	962	Baltimore
1868	686	Chicago
1878	962	St. Louis
1888	1,964	Cleveland
1898	1,729	Boston

A new period in the history of the association began in 1900 when *Science* became its official journal and was sent to all its members. Under the direction of Dr. J. McKeen Cattell and other able men who clearly saw that the association might be made a powerful agency in advancing American science, its membership doubled within two years and grew steadily until the close of the World War. During the decade 1920–1930 the association made its greatest growth, partly because of the impetus given to science by the war, partly because of the rising tide of prosperity in the country and especially because the council elected Dr. Burton E. Livingston permanent secretary of the association. The membership by five-year intervals from 1900 to 1930 as of September 30 was as follows:

Year	Membership	Meeting Place
1900	1,925	New York
1905	4,041	Philadelphia
1910	7,950	Boston
1915	8,325	Philadelphia
1920	11,442	St. Louis
1925	14,263	Washington
1930	19,059	Cleveland

During the decade from 1930 to 1939, inclusive, the association suffered from the effects of the depression and the recession. Yet in spite of serious losses in membership in 1932, 1933 and 1935, its membership is now greater than at any previous time. Details of membership data for the decade are given in Table 1.

Present trends in the membership of the association are indicated in the averages for the years 1937–1939. Since the gross loss in membership averages about 1,185 per year, the total membership of the association will decrease unless on the average about 1,185 persons become members each year. Although the gross loss in members may at first appear to be large, it is less than 6.2 per cent. of the total membership. Of the average of 1,185 persons who ceased to be members,