Here is a source book, however, which contains so much useful information, so many definite and practical suggestions that it is destined not merely to be read with interest but to be thumbed over and over by any biology teacher fortunate enough to have a copy available.

HELEN J. MANK

DOBELL, C. *Anthony Leeuwenhoek and His "Little Animals."* Harcourt, Brace. 1932.

Most biology teachers have probably heard of Dobell's treatise on Leeuwenhoek, published in 1932 on the three hundredth anniversary of the Dutch microscopist's birth. This belated review is prompted by two factors. First, while the volume was published at a price of seven dollars and a half, it has recently been offered, as a publisher's remainder, at two dollars and a half. At this price it should certainly be in every high school library, and every teacher's, if the supply is sufficient.

Second, this review may be made the occasion for reference to the persistent fallacies regarding Leeuwenhoek which seem to be widely instilled in the field of high school biology. They come to my attention both in the form of elementary texts, and in the fixed ideas of many first term students in college biology. College texts in biology, botany, and zoology seem to be free of erroneous Leeuwenhoek data, as indicated by an examination of thirty-odd texts.

As Dobell writes, his interest as a bacteriologist and protozoologist was aroused when on different occasions he found that Leeuwenhoek had been the first to see and report the existence of bacteria, free-living protozoa, and parasitic protozoa. For twenty years he pursued the study of Leeuwenhoek's contributions in these fields, mastering 16th century Dutch as part of the procedure. Now known as Leeuwenhoek's "greatest living admirer," Dobell does not find it necessary to claim that he invented the instrument. He expressly notes that all Leeuwenhoek's microscopes were simple lenses, which had had a long earlier history and use, to Roger Bacon in the 13th century, if not even to classical times. Dobell does not ask either that Leeuwenhoek be recognized as the first to use magnification for the examination of living things. He notes that Malpighi, Hooke, Borell, and others of his contemporaries had preceded him by ten or fifteen years in using some form of magnification in the study of living things. Leeuwenhoek, himself, in one of his letters (1675), mentions Swammerdam as describing certain minute animals of stagnant water. Furthermore, as Dobell notes, the Italian, Stelluti, had figured insect anatomy before Leeuwenhoek was born, and Singer is authority that Galileo had noted the compound eyes of insects by 1610, and is to be counted "the effective inventor of the compound microscope."

Not to continue citations of what Leeuwenhoek had not discovered, the things for which credit is due may be cited. Dobell calls him the father of both bacteriology and protozoology. Following his announcements of these microorganisms, their possible connection with infections was immediately suggested. By nearly all accounts, Leeuwenhoek was a careful observer, who made mistakes, but did not hesitate to correct them later, and who clearly differentiated between his observations and his speculations. His observations had much to do also with interesting men of the day in what we call microbiology. His contemporaries, Malpighi, Grew, and Swammer-

dam, were the founders of the microanatomy of plants and animals.

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FASTEN, NATHAN. *Principles of Genetics and Eugenics.* New York: Ginn and Company. 1936. 391 pp.

This text was prepared by Nathan Fasten, Ph.D., Professor and Head of the Department of Zoology of Oregon State College, for the elementary student in Genetics and Eugenics, who desires brief and accurate information in these studies. It is not necessary to have had an elaborate course in Biology to understand the principles of this book.

Throughout the treatise emphasis is placed on good heredity and good environment as the fundamental bases for the finest development of any living organism. Heredity alone is not responsible for the problems of society—environment is of great importance. Five billion dollars annually is too much to pay for those who falter in the ranks because of imperfections in heredity and environment. This ever increasing debt can only be lessened through proper education of the public in the working principles of Genetics and Eugenics. The author estimates that there are some eighteen million defectives in the United States. His hope is to increase the normal and gifted, and at the same time decrease the abnormal and deficient population.

Special attention has been devoted to the scope of eugenics, the Mendelian principles of Heredity, Variation, Environment and Applied Eugenics in relation