Martian study not enjoyed by any one elsewhere.

Suppose, then, that Mr. Lowell invite two or three other well-known expert students of planetary detail—say, for example, Mr. E. E. Barnard, of the Yerkes Observatory; Mr. W. H. Pickering, of Harvard College Observatory, and Mr. E. M. Antoniadi, of l'Observatoire de Juvisy—to come to Flagstaff and join him in observing Mars at its next opposition. Would not astronomers and the public generally accept as objective realities any surface markings observed, either visually or photographically, by all four of these experts?

These experts might perhaps also undertake, during their residence at Flagstaff, to verify the remarkable and intricate network of markings on the planets Venus[4] and Mercury[4] which have been seen at the Lowell Observatory, and only there, so far as I am aware, and which, to the uninitiated, present many points of resemblance to the "canal" system on Mars. The fact that all the members of the Lowell Observatory staff are able to see so many of these markings which, apparently, are invisible from other stations, would seem to lend additional interest to my suggestion.

Great as have been Mr. Lowell's services in stimulating zeal in planetary studies, in no way, I think, could he add more to the sure advancement of our knowledge in this field than by inviting such a committee of experts to share with him, for a time, the advantages offered by his excellent telescope and favorable atmosphere.

R. G. AITKEN

December 8, 1909

SCIENTIFIC BOOKS

The Human Body and Health. An Intermediate Text-book of Essential Physiology, Applied Hygiene and Practical Sanitation for Schools. By ALVIN DAVIDSON, M.S., A.M., Ph.D., Professor of Biology in Lafayette College. New York, American Book Company.

[4] For the markings on Mercury see *Popular Astronomy*, Vol. IV., p. 360, 1897; for the markings on Venus, *The Popular Science Monthly*, Vol. LXXV., p. 521, 1909.

This is an aggressive book. It abounds in plain statements that attract the reader and lead him on.

The author's motive and plan is indicated in the preface as follows:

> A few minutes' reflection in regard to the modern ways of living will fix in the mind of the sound reasoner the conviction that we are a careless and cruel people. Nearly one thousand human beings in the United States are dying daily of diseases which science has shown how to prevent. Streams are polluted, garbage dumped on the nearest vacant lot, fresh air and sunshine shut out of the houses by double doors and windows, and innocent children fed dirty milk because people do not realize that these acts are responsible for many of the four thousand graves daily made in our nation's cemeteries.
>
> Sanitary science and the public health can be advanced only as they are supported by an intelligent public opinion; . . . new ideas are grasped most readily by the young. Parents do not recognize that eyesight is being impaired, normal growth prevented, blood poisoned and the body starved because of customs and habits born in ignorance. . . . Anatomy and physiology is of little value to our young folks unless it helps them to practise intelligently in their daily lives the teachings of hygiene and sanitation. . . . Specific facts and full explanations are given showing how disease is caused and how the body may be kept well and strong. . . .

The contents of the book are as follows: Chapter I., The Human Body as a Living Machine; chapter II., Plants and Animals Related to Health; chapter III., The Plan of the Human Body; chapter IV., Food for the Body; chapter V., The Care and Cooking of Food; chapter VI., How Food is Used by the Body; chapter VII., Drink and Health; chapter VIII., Tobacco and other Narcotics and their Effect on Health; chapter IX., The Blood and its Passage through the Body; chapter X., Breathing and its Use; chapter XI., Air and Health; chapter XII., Cleanliness and Warmth; chapter XIII., Clothing and Colds; chapter XIV., The Bones; chapter XV., The Muscles and Exercise; chapter XVI., How the Body is Governed; chapter XVII., The Care of the Nervous System and

how Narcotics Effect it; chapter XVIII., Organs for Receiving Knowledge; chapter XIX., The Cause of Sickness; chapter XX., How to Keep Well.

The book is well supplied with illustrative cuts which for the most part are fairly good. The representation of the tubercle bacillus on page fifteen is hardly typical of that organism. The red-blood cells are described as cup-shaped (p. 79). This is, or has been, the teaching in the Harvard laboratories, but is not generally accepted.

The eustachian tube is represented as entering the middle ear at a level lower than that of the fenestra rotunda and inferior margin of the tympanum (p. 177).

A few criticisms of the text may be advanced as follows:

Page 15: Measles is given as a bacterial disease. This has not yet been proved. The author recognizes that fact on page 191.

Page 16: It is stated that "our common disease bacteria do not have spores. . . ." The bacillus of tetanus that figures so extensively in our Fourth of July mortality is a spore-forming bacterium; the bacillus of tuberculosis is thought at times to show spore formation; other pathogenic spore-forming bacteria are the bacillus of anthrax, the bacillus of malignant œdema.

Page 18: "Yellow fever and . . . are caused by tiny animals. . . ." This is probably true, but the fact remains that the specific cause of yellow fever has not yet been demonstrated.

Page 19: It is stated that the ova of head lice may be removed by washing the hair "two or three times" with "soap and equal parts of vinegar and hot water." This is a disappointing treatment. The patient is lucky if he escapes without a close hair cut. At best the ova may otherwise be removed only by hours of careful combing.

Page 35: The question is asked: "Why is it harmful to eat more than the body needs?" According to some of our best authorities it is impossible not to eat more than the body needs.

Page 37: Scarlet fever is referred to as a bacterial disease. The fact that the specific cause of this disease has not been found is recognized on page 191.

Page 44: Reference is here made to mucus as having "the power to kill many harmful bacteria and thus protect the body from disease." Our authorities on the flora of the normal mouth, nose and throat tell us that these regions may contain a score or more of varieties of bacteria, including such forms as the staphylococcus and streptococcus pyogens, pneumococcus, bacillus of diphtheria and the meningococcus.

Page 50: A description of "stomach digestion" is given here with no reference to the fact established by Cannon that salivary digestion is continued for some time after the food has reached the cardia.

Page 67: The carbonated drinks are here stated to be healthful when used in moderation. It must not be forgotten that soda water, ginger ale, and so on, are responsible for a great deal of indigestion. The specialists in our large skin clinics spend a good deal of time proscribing these drinks.

Pages 90 and 122: Turpentine and alcohol are recommended as antiseptic washes for fresh wounds. This is severe treatment. Turpentine and alcohol are very painful when applied to raw surfaces.

Page 107: ". . . impure air is heavy and near the floor." This statement is startling. In view of the fact that it is at variance with the teachings of hygiene for many years, it must be backed up with a careful array of significant experimental facts before it can be credited. The single experiment offered in the text does not suffice.

Page 121: "To avoid dandruff, the scalp should be thoroughly washed with soap and warm water once or twice a month." The avoidance of dandruff is not so simple. If much reliance is placed on this advice it will lead to disappointment.

Page 194: ". . . and numerous cases are on record where the use of milk from sick cows has given the disease [tuberculosis] to children." There is good reason for being afraid of milk from tubercular cows in spite of the fact that some of our very best authorities are not disposed to agree that there are numerous

authentic cases of human tuberculosis from this source.

A special effort is made throughout this book to present the evil effects of the use of alcohol and tobacco. This is legitimate and worthy, but one can not help asking if it is not overdone. Young people are not stupid. It is not wise to place extreme statements before them. They are very likely to discover that some of the most successful men in every branch of life smoke or drink more or less. They may find the practise in their own deservingly respected parents. They are likely to ask if the fishes on pages 72 and 111, which died in twenty-five minutes from the poison soaked out of tobacco placed in their aquaria would not have died just as quickly if tea leaves or coffee grounds or boiled cauliflower, onions or table olives had been substituted for the tobacco; or if any other smoke passed through the aquarium of the fish on page 168 would not have been as disastrous as the tobacco smoke which took that fish's life. These experiments should be checked up with controls. There are enough indisputable facts pointing to the evil effects of alcohol and tobacco to furnish sufficient argument against their unwise use.

THOMAS A. STOREY
COLLEGE OF THE CITY OF NEW YORK

Catalogue of the Lepidoptera Phalænæ in the British Museum. Volume VII., 1908; Volume VIII., 1909. By Sir GEORGE F. HAMPSON, Bart.

The present volumes deal with part of the subfamily Acronyctinæ of the family Noctuidæ. This subfamily will be treated in three volumes, of which these are the first and second. Volume VII. comprises 843 species in 96 genera, Volume VIII., 720 species in 104 genera. The key to the genera of the Acronyctinæ given in Volume VII. is reprinted in Volume VIII. with some additions and corrections and with the references to pages added. A large number of the genera are new, and their appearance in print without citation of species under them is rather unfortunate, as the proper citation of species will not occur until Volume IX. appears. In the meantime, students using the tables are liable to make use of these names. As we understand the rules, such use would appropriate the authorship of the generic names, and we have ourselves avoided using them on several occasions. Sir George Hampson follows the general plan of the preceding volumes, so useful and well received by the entomological public. It goes without saying that the majority of our familiar names are changed. But this is something that we have learned to expect and is, indeed, quite unavoidable, as never before have the moths of the world been consistently classified by an author so capable in the subject and so well supplied with material. An incidental result of the continued appearance of these volumes is the enabling of the general student to determine North American noctuids independently. Heretofore, there have existed no general tables of genera and species anywhere nearly up to date, so that it has been practically necessary for the last thirty years to refer doubtful specimens to a single student who has made this field his own. The relief now being afforded from this condition is gratifying.

HARRISON G. DYAR

SCIENTIFIC JOURNALS AND ARTICLES

The Journal of Biological Chemistry, Vol. VII., No. 1, issued December 21, contains the following: "The Iodine Complex in Sponges (3,5-Diiodotyrosine)," by Henry L. Wheeler and Lafayette B. Mendel. Decomposition of ordinary bath sponges by barium hydrate yields 3,5-diiodotyrosine (iodgorgoric acid). "On the Preparation and Properties of Iodomucoids," by Gustave M. Meyer. Treatment of tendomucoid with iodine in alkaline solution produces iodo-mucoids, containing about 14 per cent. of organic iodine. "Lactic Acid in the Autolyzed Dog's Liver," by Tadasu Saiki. The lactic acid formed in liver autolysis is largely sarcolactic acid. "Liquid Extraction with the Aid of Soxhlet's Apparatus," by Tadasu Saiki. An adaptation of the usual form of Soxhlet's apparatus for extraction of liquids. "A Study of the Chemistry of Cancer: II., Purin Bases, Creatin and Creatinin," by Tadasu Saiki. Analyses of