ciation is to take fuller advantage of its opportunities in the directions indicated above, as well as in various other ways. For instance, the practice, adopted in recent years, of offering exhibitions to young students nominated by universities and colleges, enabling them to attend meetings of the association without cost to themselves, is obviously capable and worthy of extension. The presence of distinguished scientific visitors from overseas has always been encouraged at the annual meetings: in present world-conditions it is less easy than formerly for such persons to come at their own expense, and the association is without funds to assist them. The possession of Charles Darwin's house, Down House, in Kent, which is maintained as a national memorial open to the public, offers opportunities which could be realized if the association had means to supplement the endowment which accompanied Sir Buckston Browne's gift of this property.

These wider potentialities in the association's sphere of work have all emerged in recent years; but there must also be borne in mind the field of scientific research and inquiry in which the association has honorably labored almost since its foundation. The ability to make grants for research is of the essence of its being, and to maintain and strengthen this activity is one of the first tasks of every successive general treasurer.

At each of the last seven annual meetings (1932–38) the attendance of members has exceeded 2,000, the average number being 2,375. That average had not been attained in any similar period previously. Here, then, is evidence of growing interest in the work of the association. But of those who attend the annual meetings (apart from life members), only a small proportion—about one quarter—are regular annual subscribers. The remainder subscribe only for the year of any particular meeting which they attend. I need hardly emphasize the difficulties that arise in attempting to budget on a membership income which fluctuates annually as widely as that of the association. The financial position of the association will be greatly strengthened by a substantial increase in the numbers both of regular yearly subscribers and of life members; and this appeal is issued in the hope that such an increase may be achieved. It is addressed to all who appreciate the benefits which science confers, and would wish to aid the association in discharging its function of the advancement of science.

SCIENTIFIC BOOKS

POPULARIZATION OF MODERN SCIENCE

The Wisdom of the Body. By WALTER B. CANNON, George Higginson professor of physiology in the Harvard Medical School. Revised and enlarged edition. 333 pp., with 40 illustrations. W. W. Norton and Company, New York, 1939. $3.50.

The Science of Health and Disease: A Text-book of Physiology and Hygiene. By HOWARD W. HAGGARD, director of the laboratory of applied physiology of Yale University. Revised edition. xiii + 594 pp. with 10 plates and 89 figures and 16 tables. Harper and Brothers, New York, 1938.

The Stuff We're Made of. By W. O. KERMACK, research laboratory, Royal College of Physicians, Edinburgh, and P. EGGLETON, lecturer in biochemistry, The University, Edinburgh. viii + 342 pp. with 8 plates and 55 figures. Longmans, Green and Company, New York, 1938. $3.20.

You're the Doctor. By VICTOR HEISER. 300 pp. W. W. Norton and Company, New York, 1939. $2.50.

Health, Hygiene and Hooey. By W. W. BAUER. 322 pp. The Bobbs-Merrill Company, Indianapolis, 1938.

A CHARACTERISTIC feature of scientific endeavor during the past decade has been the earnest effort on the part of reputable scientists to popularize current scientific ideas and to promote public appreciation of how science may profitably be applied in everyone's daily life. Naturally this effort concentrates along biological lines with special attention to individual and public health. The publication of Paul de Kruif's "Microbe Hunters" in 1926 set an example which a host of followers have tried to imitate.

Some of the current efforts to popularize new scientific ideas are included in the books reviewed here. These range in style from the dignified and often technical presentation of Professor Cannon to the smart fast-moving wisecracks of Dr. Bauer.

Professor Cannon's volume brings up to date his 1932 exposition of the same title. It also adds a new chapter on the effects of age on homeostatic mechanisms. For the coordinated physiological processes which maintain the complex steady states in the organism peculiar to living beings, involving, as they may, all organs and parts working cooperatively, Professor Cannon suggests the special designation, *homeostasis.* He introduced this term in order to differentiate these steady physiological states, characteristic of living things, from the relatively simple physico-chemical states in closed systems where forces are balanced and where the constant condition may be termed equilibrium. In this volume Professor Cannon considers "first, what may be regarded as the fundamental condition of stability, then the various physiological arrangements which serve to restore the normal state

when it has been disturbed, and finally, the narrowing limits of adaptation imposed by age." The book, of course, is a classic and is already one of the most influential in the development of fundamental theory of modern physiology. That its popular presentation is appreciated widely enough to require a revised second edition, is clear testimony to the skill and clarity with which Professor Cannon has developed his idea.

In his introduction to Professor Haggard's volume, Professor Yandell Henderson, brilliant and blunt as always, says it is designed "for employers and engineers in charge of labor," as "a text-book for college students," and that "every educated man should see it." It clearly and convincingly develops the thesis that modern medicine is almost entirely a matter of applied physiology. As a text-book, it could be considerably improved by the inclusion of references to significant articles or reviews. It might also be improved by some degree of personalization, that is, by indicating who some of the scientists have been who have contributed to the gathering of the information which Professor Haggard reports so impersonally.

Dr. Kermack and Dr. Eggleton's book is the first to make a consistent effort to interpret biochemistry to the public. It is admirably designed and clearly developed. These Edinburgh scientists begin by placing living things in proper proportion to the rest of the universe. They next discuss the limitations of the scientific method and go on to explain how the complex molecules of living things are built up from a relatively small variety of atomic bricks. The discussion of foodstuffs is from the standpoint of "the biological motor car." In connection with growth, repair, reproduction and special functional adaptations, the authors make illuminating observations on such matters as the economics of forced labor, the proper design of bicycles and Olympic champions. Vitamins, enzymes and hormones are entertainingly discussed. Even the no-man's-land where what is living is not to be clearly distinguished from what is not living, is bravely probed. It is in every way a beautiful work. It could, however, be improved by judicious bibliographical references to readily available original sources.

Dr. Heiser's program for personal health is a remarkable combination of clever organization, hard horse sense born of much wisdom and experience and entertaining personal anecdotes. As in the case of "An American Doctor's Odyssey," Dr. Heiser's "You're the Doctor" gives evidence of professional journalistic organization. These are some of the chapter titles: "The All-devouring Gut," "Brother Rat," "Diet and Health with Key to the Vitamins," "How Now, Brown Cow," "A Little Poison Now and Then," and "Wher'er I Roam." The general point of the whole volume is summarized in the last chapter, headed "A Merry Heart Doeth Good Like a Medicine."

Frankly journalistic is Dr. Bauer's "Health, Hygiene and Hooey." To those familiar with the medical quackery exposés in *Hygeia* and the *Journal of the American Medical Association,* Dr. Bauer's technique is well known. The information is essentially sound, and its presentation is entertaining. Dr. Bauer wisely remarks: "The best safeguard against exploitation is a knowledge of principles. Individual exploiters come and go; nostrums rise, flourish and vanish; quackery is different every day and yet, fundamentally, the same. A person who understands the characteristics of charlatanism will not be fooled by the individual exploiter. Therefore, I have not chosen to 'name names,' but rather to set up principles. . . ." Some of the chapter headings illustrate his method: "Wim, Wigor and Witamins (pinpricks in the vitamin inflation)"; "Soft Soap and Skin Games (facts and nowhere-near facts about the skin you love to retouch)"; "A Fake for Every Ache (common symptoms pay dividends to the quack and charlatan)"; "Life Begins Before Birth (we will grow old—why not gracefully?)"; "Common Sense, Preferred (how to be happy though healthy)." The book contains much factual information, but again fails to document more readily available sources.

Popularization of modern science may become a socially beneficial procedure. The success of the effort depends largely upon its sincerity. Journalistic tricks are justifiable if they stimulate attention, provoke entertainment and supply the essential information. Science popularizers should write simply without condescension and clearly, without emphasizing the obvious. When prepared by a master in his own right, as in the case of Professor Cannon, the result is likely to become not only a classic in science, but in general literature as well.

CHAUNCEY D. LEAKE
UNIVERSITY OF CALIFORNIA,
SAN FRANCISCO

REPORTS

ASTRONOMICAL SYMPOSIUM ON GALACTIC AND EXTRAGALACTIC STRUCTURE

IN connection with the dedication on May 5 of the W. J. McDonald Observatory of the University of Texas—a joint project of the University of Texas and the University of Chicago—an astronomical symposium was held at the observatory. The purpose of this symposium was to bring together the leading experts in the various fields of astronomy directly or indirectly working on the general problem of galactic and extra-