Dr. Hill remarks, with reference to the International Union for Mathematics, that "this last no longer exists." I have always understood that this Union lost the effectiveness it might have had and in the end went out of existence (in 1936, I believe) chiefly because the majority of mathematicians did not approve the political origins and development of the Union. However that may be, there is no question that the mathematicians of the world had every reason to be pleased with the effectiveness of that rather informal but close cooperation which, among other things, made possible their successful and important quadrennial international congresses. It would be unfortunate if any of Dr. Hill's readers should draw a contrary inference.

MARSHALL H. STONE

SCIENTIFIC BOOKS

VITAMINS

The Avitaminoses. By WALTER H. EDDY and GILBERT DALLDORF. xii + 519 pages; index, 41 plates and 28 figures. Baltimore: The Williams and Wilkins Company. 1941. $4.50.

THE first four chapters are essentially introductory in character. Chapter I, a very short chapter of eight pages called "Vitamins and Disease," is clearly and sensibly written and is admirably adapted for the orientation of the beginner seeking knowledge about vitamins. Chapter II, "The Chemical Nature of the Vitamins," and Chapter III, "Vitamins and Cellular Oxidation," are concisely and clearly expressed and adapted to the understanding of those pathologists and clinicians without profound knowledge of chemistry. Chapter III is, on the whole, a stimulating and clever job of exposition in outlining the achievements of biochemists in tracing processes involving complex compounds or systems in living tissues. Chapter IV on "Vitamin Requirements" is a seventeen-page condensed account of current information regarding human vitamin requirements, adequately documented.

Chapters V to XXII, inclusive, deal with the nature and functions of the various vitamins and the pathologic states arising from vitamin deficiencies.

Each chapter devoted to the nature and functions of a vitamin is succeeded by a chapter dealing with the respective avitaminosis as naturally occurring in man and animals, and as produced experimentally. The chapters on the avitaminoses contain very fair historical accounts of each subject and quite detailed clinical and pathological descriptions.

This arrangement or plan of the book, while a bit clumsy and leading to some unnecessary repetitions, is, on the whole, a very satisfactory device for covering a wide range of factual knowledge in an interest-sustaining manner. In the vitamin B group, pairs of chapters deal with vitamin B_1, vitamin B_2 or G or riboflavin and vitamin P-P or nicotinic acid, the anti-human pellagra—the anti-black tongue factor for dogs. "The nature and function of other members of the B-complex" and "Deficiency diseases related to the vitamin B complex" are covered in Chapters XI and XII—both rather brief though documented by satisfactory bibliographies. These two chapters require careful reading and seem less well done than those dealing with other vitamins, in part due to great condensation by the authors and in part due to the present undeveloped stage of knowledge, but on the whole they suffice to acquaint the reader with what is known about the subject-matter. Part I concludes with Chapter XXIII on "The Vitamins and Infectious Diseases," happily a short chapter, a bit speculative and not sufficiently analytical in appraisal of work cited.

Part II of the book, a total of thirty-eight pages, consists of Appendix A, on "Laboratory Tests Useful in the Diagnosis and Study of Deficiency Disease," and Appendix B, on "The Vitamin Content of Foods."

The procedures discussed in Appendix A do not represent a critical selection from the methods now available but are those, as stated in the preface, with which the authors have had experience. An expansion of this appendix with a good bibliography covering the field would have increased the value of the book.

Appendix B is composed of an impressive array of tables and apparently is adequately documented.

This book—"planned to be a helpful manual rather than a complete treatise"—achieves its purpose admirably in presenting "the field from clinical, chemical and pathological points of view." A critical reading of the book reveals many minor defects and gives the impression of having been hastily put together, somewhat carelessly in places, but nevertheless, with great ingenuity. As a compilation of factual knowledge, it is an outstanding book on the avitaminoses. As a scientific review it is inadequate in places and gives indication of the personal interests and biases of the authors.

The minor defects referred to could have been eliminated by careful reading of the manuscript by an intelligent secretary. The illustrations of the pathology, had the authors been willing to go beyond their personal work more freely, could have been much better chosen. It is to be hoped that in future editions

more and better chosen illustrations will be incorporated.

The reviewer has a guilty feeling in making these few derogatory comments because the authors have made an honest effort to achieve their purpose and have succeeded so well that the general reaction is one of gratitude for having placed on the market a book of such usefulness. The reviewer commends it to medical students and to the medical profession in general. For biochemists and pathologists it should serve to present admirable perspectives of each other's activities.

S. B. WOLBACH

HARVARD MEDICAL SCHOOL

CELLS

Unresting Cells. By R. W. GERARD. xv + 439 pp. New York: Harper and Brothers. $3.75. 1940.

THIS book is a straightforward, lucidly illustrated account of the structure, function, growth and reproduction of cells from the view-point of a physiologist. The author's reasons for writing a book of popular science are set forth in his preface as follows: "the scientist—yes, the pure scientist—is not merely justified in spending some energy on the popularization of sound science, but even more, has some duty to civilization to do so," . . . for, "scientists must help recruit men in other walks of life to the method and attitude of science in dealing with problems of state and society."

Following a brief account of the characteristic properties of protoplasm, two chapters deal with the structure and simpler chemistry of protoplasm. Enzymes, their nature and activities, are treated in a long chapter which prepares the way for an account of metabolic processes. The questions of energy sources and the conversion of energy which crept into the previous chapters are then considered, with emphasis on the concept of free energy. Thus half of the volume is devoted to the more strictly physico-chemical aspects of cells.

The remainder of the book consists of an excellent account of irritability and behavior, an account of the structure and differentiation of cells as seen through the microscope, and then proceeds to the problems of reproduction and inheritance. The latter, treated largely as problems of the reproduction and inheritance of molecules, are superbly done.

The illustrations are consistently good, the lighter note in some of the drawings serving to get the layman over certain difficult bits of terrain. The drawing for the chapter head on heredity represents chromosomes of the giant salivary gland type (which never undergo mitotic division) in the process of dividing. This is the only striking inaccuracy in the book and will prove tantalizing to those cytologists who would like to see such chromosomes undergo division. There is a good index.

This is a stimulating volume which will be read with great interest by students of science as well as the layman, for Professor Gerard writes with clarity and enthusiasm, as well as with purpose.

D. F. POULSON

YALE UNIVERSITY

REPORTS

AWARD OF GUGGENHEIM FELLOWSHIPS FOR 1941

EIGHTY-FIVE fellowships with grants of funds amounting to $180,000 to assist research and creative work to be carried on in the year 1941–42 by American and Canadian scholars and artists are announced by the John Simon Guggenheim Memorial Foundation. Last year seventy-three fellowships were granted and fifty-eight were awarded in 1939. The recipients were selected from more than fourteen hundred applicants. This is the sixteenth annual series of fellowship awards by the foundation, which was established and endowed by former United States Senator and Mrs. Simon Guggenheim as a memorial to a son.

The Guggenheim fellowships are granted to scholars and artists who by their previous work have shown themselves to be persons of unusual ability. Men and women, married and unmarried, of all races and creeds, who are citizens or permanent residents of the United States, citizens of Canada and of certain Latin American countries, are eligible on equal terms. The fellows are usually of ages between 25 and 40 years. This year their average age is thirty-six years. The stipends are usually $2,500 for a year.

Since its establishment sixteen years ago the foundation has granted 1,017 fellowships with stipends amounting to about $2,300,000.

The following fellowships in the sciences have been awarded:

DR. CORNELIUS BECKER PHILIP, medical entomologist in the U. S. Public Health Service, stationed at the Rocky Mountain Laboratory, Hamilton, Mont., who will prepare a book on ticks and their relation to animal and human disease. He will work in Mexico, Colombia and Brazil.

DR. EDWARD HOLLAND SPICER, instructor in anthropology in the University of Arizona, will prepare a comparative study of the influences of contact with other cultures upon the Yaqui Indian communities of Mexico and Arizona.

DR. ISABEL TRUESDELL KELLY, of the University of