

REVIEWS

The Life of Sir J. J. Thomson. By Lord Rayleigh. (Cambridge University Press, London), 1942. Pp. x + 299. Price 18sh.

Sir J. J. Thomson's own *Recollections and Reflections* is already available to those who wish to understand and appreciate J. J. But, there are several facts and incidents which J. J. had skipped over in his account for reasons of modesty. Besides, a clear and coherent account of his life by anyone except himself is most necessary when it is realised that J. J. and his school really laid the foundation of modern physics. The book under review fulfils both these wants. It does not in any way duplicate J. J.'s own account. It is written in a complete, accurate and extremely lucid form. Lord Rayleigh has done a signal service to the scientific world in general and to physicists in particular by writing this excellent and much needed book.

The first chapter gives an account of J. J.'s life till his appointment as Cavendish Professor of Physics at Cambridge. It would have been better if the author had devoted a little more space and given some more details of J. J.'s early life. Chapter II provides factual information of J. J.'s early days at the Cavendish. Chapters III, IV, V, VI and IX give an account of J. J.'s contribution to physics. These chapters are most beautifully written and bring out very clearly the importance and outstanding excellence of the contributions made by J. J. and his school to physics. Few can excel Lord Rayleigh in presenting in a proper perspective the difficulties and the outstanding excellence of these pioneer experiments. These chapters contain plenty of good physics most eminently described and no one interested in physics can afford to miss them.

The rest of the book represents a faithful account of the varied aspects of J. J.'s life and career. The chapters on J. J. as Master of Trinity contain graphic descriptions which can hold the attraction of even the most disinterested reader. Controversial points like J. J.'s correspondence with Sir James Dewar when J. J. was President of the Royal Society and J. J.'s correspondence with the late Lord Rutherford prior to the latter applying for the Cavendish Professorship come up for the most lucid description and bring out clearly J. J.'s wide outlook and broadmindedness. The last chapter on J. J.'s closing years is written in a most touching way and the reader as he goes through it becomes one with J. J.'s admirers and feels fully the respect and regard that all had for J. J.

The book is in itself a most fitting memorial to J. J. This is really no overestimate! The printing and get-up are excellent. The reviewer has absolutely no hesitation in saying that the book will be a valuable addition to any library, public or private.

S. V. CHANDRASEKHAR AIYA.

Annual Review of Physiology, Vol. IV, 1942. Editors J. M. Luck & V. E. Hall. (American Physiological Society and Annual Rev. Inc., California), 1942. Pp. 709. Price \$5.0.

Although the war has further limited the possibilities of receiving scientific contributions from a large part of the world, nevertheless a huge material was collected and reviewed in this volume. In 23 chapters 3,925 papers have been critically evaluated and all the important results obtained up to the second half of 1941 have been lucidly arranged. Obviously, it is impossible to reproduce in a few lines the contents of this *Review* which fill 55 pages of a subject index. An excellent staff of collaborators, most of them being leading experts in their own field, not only succeeded in producing a most useful and reliable work for ready reference but also a very readable and stimulating manual, presenting a balanced picture of the progress made in those subjects, which are included in the present volume. In the section on "permeability" *Blinks* reports the revolutionary results, achieved by using artificial radioactive elements as tracers of permeability. *Aebersold* and *J. H. Lawrence* survey "the physiological effects of neutron rays" which would become more effective than X-rays in destroying malignant tissues if boron could be introduced into the growth. The chapter on "physiological aspects of genetics" by *Strandskov* shows the importance of this young science for the understanding of immunology and endocrinology. *Hamilton* and *Willier* treat the influence of hormones and nerve correlation on "developmental physiology". *J. P. Peters* in the section on "water metabolism" deals with the distribution of water in the body, the forces that determine its allocation to various compartments of the system and the interchanges between them and the factors—especially endocrine influences—that control exchanges of water with the environment. Results of experiments on "growth" and differentiation in seed plants and slime molds are reported by *Avery, Jr.* *Chambers*, *Shorr* and *Barker* present the recent contributions to our knowledge of environmental and hormonal influences on "energy metabolism", including that of organs and isolated tissues. A short but interesting section on "the physiology of the skin" with special reference to pain and itching by *Baird Jr.*, *Lever* and *Spies* is followed by *Hertzman's* survey of "the peripheral circulation", which contains some important material on the vasomotor system and shock. Very instructive is *Visscher's* article on the "heart", including results of clinical and pharmacological interest. *H. P. Smith's* chapter on "blood" gives a useful review of all aspects of blood coagulation and discusses recent investigations on erythrocyte formation. *Van Liere's* report on the "digestive system" abstracts numerous (200) papers on salivary secretion, gastric and intestinal secretion and absorption, on motility and allied subjects. An important