tables of numerical results. There are references to over six hundred publications in the literature. The price of the book is reasonable, and it is perhaps not too much to say that it will rapidly become a must for all workers in this field.

Les Méthodes nouvelles de la Mécanique céleste (Reprint). By H. Poincaré. Vol. 1, 382 pp.; Vol. 2, 476 pp.; Vol. 3, 414 pp.; published in 1892, 1893, 1899 respectively; paperbound $2.75 each. **An Introduction to the Study of Stellar Structure** (Reprint). By S. Chandrasekhar. 509 pp.; original edition 1939; paperbound $2.75. Dover Publications, Inc., New York, 1957. *Reviewed by George Weiss, University of Maryland.*

The first and still most outstanding success of Newtonian mechanics was in the description of celestial motion. Celestial mechanics is not a fashionable subject in contemporary physics. Hence we tend to forget the very substantial and very elegant contributions made to this field in the eighteenth and nineteenth centuries. The genesis of Hamilton-Jacobi theory, the theory of adiabatic invariants, perturbation theory, and other tools which are commonplace in physics today, were first found in the study of the three-body problem and other investigations related to celestial motions. The current output of books on celestial mechanics is a slender one and few of the modern books are likely to reach the level of Henri Poincaré's monumental three-volume set, *Les Méthodes nouvelles de la Mécanique céleste.*

Among the material included in this set are a discussion of the Hamilton-Jacobi theory especially as it applies to the three-body problem, an account of perturbation theory including the treatment of differential equations with periodic coefficients (with a discussion of the elimination of spurious secular terms), and an introduction to the topological theory of nonlinear differential equations.

Poincaré wrote at a leisurely pace that makes for easy reading without obliging the reader to fill in many steps. In this respect Poincaré's treatise is to be preferred to the more businesslike *Celestial Mechanics* by Moulton and can be recommended for physicists, applied mathematicians, and readers who are interested in browsing among the more delightful investigations of the eighteenth and nineteenth centuries.

This review has not yet exhausted superlatives for there are still some reserved for the reprinted edition of *An Introduction to the Study of Stellar Structure* by S. Chandrasekhar, which, broadly speaking, contains an account of classical mechanics and thermodynamics as they overlap in the construction of models for stellar interiors. Of particular interest are two chapters which lay the foundation for more detailed calculations. The first deals with the axiomatic development of classical thermodynamics by the method of Carathéodory, and the second is on relativistic quantum statistics. Both of these chapters are almost unequalled for lucidity of exposition. A large part of this volume is devoted to the study of the equilibrium of polytropic and isothermal gas spheres. These results are then extensively applied to the study of models for stellar interiors which yield information on the relation between the mass dimensions and the luminosity of a star. The final chapter on stellar energy is by now outdated, but the rest of this volume is likely to remain the outstanding classic in this field for a long time to come.

The Dover Publishers will certainly prosper if they continue to offer such excellent reprints in inexpensive editions.

Correction

In the review of *The Spectrum of Atomic Hydrogen* (see *Physics Today,* April 1958, p. 32) the word "positron" should be read instead of "proton" in line 10 from the bottom.

Books Received

Physics of Nuclear Fission: Supplement No. 1 of the Soviet Journal *Atomnaya Energiya.* Translated from Russian by J. E. S. Bradley. 182 pp. Pergamon Press, London & New York, 1958. $9.00.

Zum Weltbild der Physik (7th Revised Edition). By Carl Friedrich von Weizsäcker. 378 pp. S. Hirzel Verlag, Stuttgart, Germany, 1958. DM 14.70.

Dover Reprints. *Gaseous Conductors: Theory and Engineering Applications,* by James Dillon Cobine, 606 pp., paperbound $2.75. *Thermodynamics,* by Enrico Fermi, 160 pp., paperbound $1.75. *Foundations of Physics,* by R. Bruce Lindsay and Henry Margenau, 542 pp., paperbound $2.45. *The Theory of Functions of a Real Variable and the Theory of Fourier's Series,* by E. W. Hobson. Vol. 1, 736 pp. Vol. 2, 780 pp., paperbound $3.00 each. Dover Publications, Inc., New York, 1958.

The Story of Albert Einstein. By Mae Blacker Freeman. 178 pp. Random House, New York, 1958. $2.95.

Proceedings of 12th International Scientific Radio Union General Assembly (Boulder, Colo., Aug.–Sept. 1957). Vol. 11, Part 1, Commission 1: On Radio Measurements & Standards. 78 pp. URSI, Brussels, Belgium, 1958. Paperbound $2.00.

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THEORY OF DIELECTRICS (2nd Revised Edition). By H. Fröhlich. 192 pp. Oxford U. Press, New York, 1958. $4.80.

OUR NUCLEAR ADVENTURE: Its Possibilities and Perils. By D. G. Arnott. 170 pp. Philosophical Library, Inc., New York, 1958. $6.00.

THE ATOMIC AGE AND OUR BIOLOGICAL FUTURE. By H. V. Brøndsted. Translated by E. M. Huggard. 80 pp. Philosophical Library, Inc., New York, 1957. $2.75.

PHYSIQUE ET TECHNIQUE DES TUBES ÉLECTRONIQUES, Vol. 1. By R. Champeix. 214 pp. Dunod, Paris, France, 1958. 2.900 fr.

ATOMIC PHYSICS AND HUMAN KNOWLEDGE. By Niels Bohr. 101 pp. John Wiley & Sons, Inc., New York, 1958. $3.95.

RHEOLOGY: Theory and Applications, Vol. 2. Edited by Frederick R. Eirich. 591 pp. Academic Press Inc., New York, 1958. $18.00.

HIGH-SPEED DATA PROCESSING. By C. C. Gotlieb and J. N. P. Hume. 338 pp. McGraw-Hill Book Co., Inc., New York, 1958. $9.50.

PRINCIPLES OF ELECTRONIC INSTRUMENTS. By Gordon R. Partridge. 393 pp. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1958. $11.00.

NUCLEAR RADIATION DETECTION. By William J. Price. 382 pp. McGraw-Hill Book Co., Inc., New York, 1958. $9.00.

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