## BOOKS *Continued from preceding page*

machines, differential analysers, the Eniac, the early Harvard and Bell relay computors, the little-known Kalin Burkhart "logical truth calculater," and an ingenious demonstration-model digital computer of his own design. These descriptions are based on wide acquaintance with these machines and are for the most part lucid and accurate.

Berkeley undertakes to introduce his readers to neurophysiology, linguistics, general semantics, logic, and sociology as these fields bear on computing machines and industrial control equipment ("robot machines"). In cutting so wide a swath some lack of profundity is to be expected. He defends only feebly the thesis announced in his title, that the capabilities of general-purpose calculators are wide enough to justify the use of the term *thought.* It is unfortunate that he failed to present the concept of the "universal computer" which has played an important role in the development of this field. (A. M. Turing showed, in 1936, that a computer of modest complexity can compute any number, i.e. solve any computational problem, which can be computed by any machine. Many of the machines in existence or under construction essentially satisfy the criteria for such universal computers. Thus it might be argued that a suitably programmed computer of the current crop compares unfavorably with a human brain only in speed.)

In two platitudinous chapters, Machines that Think and What They Might Do for Men, and Machines that Think and How Society May Control Them, Berkeley discusses the social implications of the forthcoming industrial revolution predicted by Wiener (*Cybernetics,* John Wiley and Sons, 1948). Berkeley's social outlook is amiable but entirely unoriginal.

An extensive and well selected bibliography is appended.

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## Books Received

ELECTRON-TUBE CIRCUITS. By Samuel Seely. 529 pp. McGraw-Hill Book Company, Inc., New York, 1950. $6.00.

MEASURE THEORY. By Paul R. Halmos. 304 pp. D. Van Nostrand Company, Inc., New York, 1950. $5.90.

MATRIX ANALYSIS OF ELECTRIC NETWORKS. By P. Le Corbeiller. 112 pp. Harvard University Press, Cambridge, Massachusetts; and John Wiley and Sons, Inc., New York, 1950. $3.00.

EARTH WAVES. By L. Don Leet. 122 pp. Harvard University Press, Cambridge, Massachusetts; and John Wiley and Sons, Inc., New York, 1950. $3.00.

INTRODUCTION TO THE THEORY OF PROBABILITY AND STATISTICS. By Niels Arley and K. Rander Buch. 236 pp. John Wiley and Sons, Inc., New York, 1950. $4.00.

A GENERAL KINETIC THEORY OF LIQUIDS. By M. Born and H. S. Green. 98 pp. Cambridge University Press, New York, 1950. $2.25.

VACUUM EQUIPMENT AND TECHNIQUES. Edited by A. Guthrie and R. K. Wakerling. 264 pp. McGraw-Hill Book Company, New York, 1949. $2.50.