REVIEWS AND DESCRIPTIONS OF TABLES AND BOOKS

The numbers in brackets are assigned according to the American Mathematical Society classification scheme. The 1980 Mathematics Subject Classification (1985 Revision) can be found in the December index volumes of Mathematical Reviews.

4[01A55, 01A70, 68–03].—ANTHONY HYMAN, *Charles Babbage, Pioneer of the Computer*, Princeton Univ. Press, Princeton, N. J., 1982, xi + 287 pp., 23 cm. Price $9.95 (paperbound).

This meticulously researched, well-written, and profusely illustrated study of the life and accomplishments of Charles Babbage is an outstanding addition to the growing collection of such literature by many writers, including Edmund C. Berkeley, B. V. Bowden, Herman H. Goldstine, Daniel Halacy, Philip and Emily Morrison, and Maboth Moseley.

As Hyman acknowledges, the principal sources of information concerning Babbage's calculating engines have remained the fragmentary autobiographical *Passages from the Life of a Philosopher* and *Babbage's Calculating Engines*. The latter consists of relevant published papers of Charles Babbage, supplemented by posthumous notes by his youngest son, Henry.

The extraordinary range of Babbage's interests and inventions is fully revealed in the text and may also be inferred from an appended chronological list of more than eighty publications either directly written or inspired by him.

Appropriately, a significant portion of this book is devoted to a detailed account of the development of Babbage's plans for his successive difference engines and his analytical engines and of his frustration in prolonged, ineffectual attempts to obtain adequate financial support from the British government in that lifelong project.

In an epilogue, entitled "From the Analytical Engine to the Modern Computer", the author thus summarizes Babbage's enormous challenges and difficulties in his evolution of the concept of a universal computer: "And yet, in its versatility Babbage's achievement remains unrivalled. Where modern pioneers worked in teams and were part of a great movement, save for his assistants and occasional help from his sons, Babbage worked by himself, far ahead of contemporary thought. He had not only to elaborate the designs but to develop the concepts, the engineering, and even tools to make the parts. He had to develop the mathematics, and his notation through its successive stages, pioneer microprogramming and coding; even to conceive of the idea in the first place. Charles Babbage stands alone: the great ancestral figure of computing."

<div align="right">J. W. W.</div>