How are we to learn to distinguish between important and unimportant programming details if such things are not discussed somewhere? How this should be done I am not quite sure. The study of Volumes I and II of the *Handbook for Automatic Computation* might be a good way to begin.

B. P.

1. T. J. Dekker and W. Hoffman, *Algol* 60 *Procedures in Numerical Algebra, Parts I and II,* Mathematisch Centrum, Amsterdam, Holland, 1968.
2. H. H. Goldstine, F. J. Murray and J. von Neumann, "The Jacobi method for real symmetric matrices," *J. Assoc. Comput. Mach.*, v. 6, 1959, pp. 59–96.

31 [4].—C. William Gear, *Numerical Initial Value Problems in Ordinary Differential Equations*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1971, xvii + 253 pp., 24 cm. Price $12.95.

"I have tried to gather together methods, mathematics and implementations and to provide guidelines for their use on problems." The author has succeeded admirably in this effort. With a careful selection of illustrative examples, he presents clear discussions of the reasons that various algorithms perform as they do. In each case, he begins with a concrete description of the numerical method and ends with a definite mathematical analysis of the procedure. The reader is masterfully guided through the regions of stability for each method. He explains how to choose an appropriate method (step size and order) for solving the initial value problem; and in particular, discusses the treatment of stiff equations, gives a brief development for handling singular perturbation or singular implicit equations, and shows how to solve for certain parameters that may appear as unknowns in a given system of differential equations. The author only describes those techniques that he has found to be of the most utility; in this way the book is kept slim and its subject matter alive. Three FORTRAN subroutines for the numerical solution of differential equations are listed. As indicated in the preface, the author hoped to repay his debt to society by setting his "thoughts on paper so that the useful among them might benefit others." In this connection, the reviewer believes that Gear's debt has been repaid many times.

E. I.

32 [7].—Alfred H. Morris, Jr., *Table of the Riemann Zeta Function for Integer Arguments*, Naval Weapons Laboratory, Dahlgren, Virginia, ms. of 3 pp. +2 computer sheets deposited in the UMT file.

The Riemann zeta function, $\zeta(n)$, is herein tabulated to 70D for $n = 2(1)90$. Confidence in the complete reliability of the tabular entries is inspired by the accompanying description of the details of the underlying calculations, which were carried to 80D.

This carefully prepared tabulation constitutes a valuable supplement to the corresponding 50D table of Lienard [1] and the 41S table of $\zeta(x) - 1$ of McLellan [2].

J. W. W.