aspirant toward a perfection he can never attain. They can go their own unpredictable way, but science, since in the future it will start "to interfere with the fate of man as never before," imperatively must become fused with the humanistic tradition.

I cordially commend this book. It is sage and informative, and it continually wrestles with great issues that concern us all.

Mathematics

Degrees of Unsolvability. Gerald E. Sacks. Princeton University Press, Princeton, N.J., 1963. xii + 174 pp. Illus. Paper, $3.50.

This is a specialized monograph on a specialized topic in mathematical logic. A basic understanding of elementary recursion theory is presupposed.

The main subject of this work is an investigation into the structure of the Kleene-Post semilattice of degrees of unsolvability. Among the topics discussed are minimal degrees, minimal upper bounds for sequences of degrees, recursively enumerable degrees (including an interpolation theorem for recursively enumerable degrees), the relation of the jump operator to the ordering of degrees, and incomparable degrees.

The technique that the author employs in his investigation is usually referred to as the *priority method*, a method which owes its inspiration to the work of Friedberg and Muchnik. In fact, this monograph may be viewed as an application of the priority method to the study of degrees of unsolvability. The author exhibits considerable ingenuity in applying priority arguments to this study.

Interspersed throughout the monograph are numerous comments on the priority method per se and its applicability. Chapter 4, entitled "The priority method of Friedberg and Muchnik," is devoted to an attempt to establish a definite form of priority argument (theorem 1 and proof), which the author states "will be useful to anyone who wishes to develop an intuitive understanding of the workings of the priority method in all of its manifestations." This belief is questionable on two grounds.

1) It appears to be pedagogically simpler to read Friedberg's original papers to obtain an "intuitive understanding" of the priority method.

2) Many priority arguments are not readily cast in the form given in chapter 4. This raises doubt about whether an intuitive understanding of the priority method "in all of its manifestations" can be obtained by the work of chapter 4.

In general, although many of the author's priorities appear to adhere to his comments on the priority method, it is not certain that all possible priorities do. We are still a long way from a complete understanding of the nature and scope of this method. Perhaps a study of "structural" priorities, as was done by some other logicians, will be a help in this direction.

The author has informed me that he is preparing an errata. The prospective reader is advised to consult this errata before reading the monograph.

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Learned Societies

American Learned Societies. Joseph C. Kiger. Public Affairs Press, Washington, D.C., 1963. viii + 291 pp. $6.

In *American Learned Societies* Joseph C. Kiger ambitiously undertakes the American aspects of a story which, in the broader context of Western Civilization, he feels ushered in the Modern World. This belief is bolstered by nothing in his book. Apart from vaguely correlating the rise of the city to the rise of the modern learned society Kiger presents very little evidence that the societies function in "society." It is always dangerous to criticize a book on the ground that the author should have written another book entirely, but in this case the dangerous course is the only course.

A list of everything omitted would require another book, but consider one example. A thorough reading demonstrates why the National Resources Committee was not included in the index: it is nowhere mentioned in the text. In 1935 the National Academy of Sciences–National Research Council, the Social Science Research Council, and the American Council on Education began sending representatives to sit on a science committee of the National Resources Committee, later the National Resources Planning Board. For 7 years this interesting interdisciplinary committee, composed of members of the three largest learned federations, evaluated and made occasional abortive attempts to coordinate the nation's scientific resources. But the science committee was only one facet of a rich and important story that deeply concerned American learned societies in the 1920's and the 1930's—a story that extends well into the present. Kiger has ripped these societies out of the political and social soil that nourished them.

The serious deficiencies of the book seem to grow out of problems of definition. By taking up each society in turn they are isolated from the more important influences which brought them into being and shaped their development. Can one talk about the origins of the Social Science Research Council without mentioning C. E. Merriam or W. C. Mitchell? Can one discuss the 1920's as a fecund season for the social sciences without nodding toward *Recent Social Trends*? The truth is that Kiger is trapped in his own static organization, which is never dynamic or fluid enough to permit the free movement of imagination or insight.

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Trigonometry

The Non-Algebraic Elementary Functions. A rigorous approach. Andre L. Yandl. Prentice-Hall, Englewood Cliffs, N.J., 1964. xiv + 266 pp. Illus. $5.95.

This trigonometry text, which is for "above-average" high school seniors or college freshmen, has as its stated objective "the training of the student for a rigorous calculus course."

After a brief treatment of sets, the real number system is introduced as a set of objects, together with the addition and multiplication operations, satisfying field, order, and completeness properties. Functions (defined as sets of ordered pairs) and inverse functions are carefully presented and their properties discussed.