articles so that users of the collected works would be certain of
employing the precise references as in the originals.

Lee Lorch, University of Alberta

Introduction to elementary vector analysis, by J. C. Tallack.
Cambridge University Press (The MacMillan Company of Canada Limited),
1966. i + 140 pages. $3.00.

The title of the book under review is to be taken literally for the
material covered is the following: vector addition and subtraction,
multiplication by scalars, differentiation, integration and scalar
multiplication (dot products). An anomaly is the absence of the cross
product. Although the book is intended to be brief, there seems little
justification for this omission.

The author in his preface states that his aim is "to provide an easy
introduction" and that "although the material is of an elementary nature,
it has been developed rigorously." His aim has nearly been fulfilled in
that the treatment of vectors proceeds intuitively through a discussion of
displacements and geometry; at times, however, the reading is made
more difficult because the author has failed in his attempt to make the
development rigorous. In particular, the derivative of a vector is
defined without giving any consideration - much less a definition - of the
notion of the limit of a vector function of a scalar. The integral of a
vector function is defined as the anti-derivative; yet, the author moves
ahead expecting the reader to swallow the line integral with absolutely
no mathematical definition!

In the reviewer's opinion, the content is too bare for use in
standard vector analysis courses offered in Canada and the United States,
and the material is inappropriate for the new vector courses being
developed for prospective secondary teachers.

S. Schuster, University of Minnesota

Iterative solution of elliptic systems and applications to the
neutron diffusion equations of reactor physics, by Eugene L. Wachpress.
Prentice-Hall Inc., Englewood Cliffs, N. J., 1966. xiv + 299 pages.
$12.95.

This book deals with many aspects of the theory and practice of the
numerical solution of the elliptic equations of reactor physics. It is based
upon the author's experience in the naval reactor programme while
employed at the Knolls Atomic Power Laboratory, Schenectady, N. Y.,
and introduces a new non-linear iterative procedure based upon the
periodic application of a variational acceleration technique. The earlier
chapters of the book, dealing briefly with matrix analysis and the formulation
of discrete boundary value problems, contain material which has been

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better presented alsewhere or, like the paragraphs on parabolic and hyperbolic problems, could be omitted entirely. Later chapters include a careful formulation of the group diffusion equations of reactor physics, detailed descriptions of known iterative and semi-iterative methods and a valuable discussion of the results of careful numerical experiments. The book concludes with a chapter on the author's new non-linear iterative procedure whose effectiveness, as the author admits in the preface, has yet to be evaluated. This could prove to be a significant advance in this field; in any event the book will be valuable as a sourcebook and reference for the iterative methods it describes.

James L. Howland, University of Ottawa

Polish logic, 1920-1939, edited by Storrs McCall. Oxford University Press, 1967. viii + 406 pages. $15.00.

These are English translations of 18 papers by the following Polish logicians who flourished between the two wars: Ajdukiewicz, Chwistek, Jaskowski, Jordan, Leśniewski, Łukasiewicz, Slupecki, Sobociński and Waisberg. The notable exception is Tarski, whose papers have already appeared in "Logic, Semantics, Metamathematics", reviewed in this Bulletin some years ago.

This is undoubtedly a very interesting collection, and the editor deserves great credit for having brought it together. The reviewer was particularly interested in seeing the article "Syntactic connection" by Ajdukiewicz, the first attempt to produce a type-theoretic analysis of the grammars of natural languages.

The papers are remarkably uniform in style: the bracketless "Polish" notation prevails. On the whole, however, it would seem to the reviewer that they are not in the mainstream of logical development and that there is a preoccupation with side-issues.

J. Lambek, McGill University

From Frege to Gödel, edited by Jean van Heijenoort. (A source book in mathematical logic, 1879-1931). Cambridge, Mass., Saunders of Toronto, 1967. x + 660 pages. $18.50.

This is an invaluable collection of 45 contributions to mathematical logic in its classical period, written in or translated into English, each preceded by an explanatory preface. The editor has been assisted by Dreben, Quine, and Hao Wang.

In this reviewer's opinion, the contributions have been wisely chosen to illuminate the birth of the most important ideas in modern logic and the controversies surrounding them. This volume should be on the shelf of every one interested in logic or the history of mathematics.