<u>Mathematiques de la physique et de la technique</u>, by J. Kuntzmann.
Hermann et Cie, Paris, 1961. 774 pages. 60 N. F.

The best idea of the scope of this work can be obtained by giving
a list of chapter headings. (1) Topology and Orientation.
(2) Integrals. (3) Extension of Integrals; Series; Applications.
(4) Probability. (5) Trigonometric Series. (6) Matrices.
(7) Vectors; Vector Integrals. (8) Theory of Vector Fields.
(9) Elementary Functions of a Complex Variable. (10) Derivatives
and Integrals of Functions of a Complex Variable. (11) Conformal
Representation. (12) Mathematical Formulation of Problems.
(13) Systems of Differential Equations. (14) Bessel Functions.
(15) Introduction to Partial Differential Equations. The book concludes
with a section of answers to the various exercises.

As a textbook, the book is written in a clear and interesting
fashion, and should be of use to any student who wishes to learn the
mathematics connected with the topics under discussion. It suffers
from the disadvantage that, like any book which attempts to cover
such a vast range of topics, there is insufficient material on many
of the topics. The chapters on Probability and on Matrices should
probably have been omitted, since not enough material can possibly
be included to be of much value. Apart from these two topics the
content of the book falls into three parts. Chapters 2, 3, 5, 7, and 8,
give an account of advanced calculus which might well be useful for
students taking a course by that title. Chapters 9, 10, and 11, provide
a good account of the introductory work on complex variable, and
might be used as an alternative to the small book on Complex Variable
by E. G. Phillips. The final chapters 12, 13, 14, and 15, would be
useful as a supplement to a course in differential equations, although
they provide treatment of special topics rather than a connected account
of the subject. The work on Bessel Functions in Chapter 14 is well
presented, although many persons would prefer to treat other topics
in at least as great detail.

There are a number of problems in the book, but not nearly
enough to make it of great use as a textbook. Indeed, by North
American standards, one could say that the book is very deficient in
problem material.

One can not help feeling, in reading an omnibus of this kind,
even in the case of a volume such as the present one which is very
well written, that the author would have been better advised to write
three volumes, one on Advanced Calculus, one on Complex Variable,
and one on Differential Equations. In an attempt to keep the volume
down to a reasonable size, the treatment of the topics has had to be
cut to a stage where at times one feels that inadequate space is allotted
to the topics discussed. This is a fault of the omnibus type of book

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rather than of this particular volume which is, as far as the genre allows, well presented.

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Partial Differential Equations and Continuum Mechanics.
Proceedings of an International Conference Conducted by the
Mathematics Research Center at the University of Wisconsin, Madison,
June 7-15, 1960, edited by Rudolph Langer. Madison, The University
of Wisconsin Press, 1961. xv + 397 pages. $5.00.

This is a collection of nineteen lectures which were delivered at
the Conference and reproduction of 45 abstracts of papers presented
at this occasion. The authors of the 19 lectures are S. Agmon,
J. M. Burgers, T. M. Cherry, G. Fichera, L. Hörmander, I. Imai,
J. Kampé de Ferriet, J. Leray, H. Lewy, C. B. Morrey Jr.,
J. Moser, C. Müller, K. Nickel, A. Pleijel, D. P. Riabouchinsky,
B. R. Seth, R. Stoneley, F. G. Tricomi, A. Weinstein.

H. S.

Fundamentals of Galois Theory, by M. M. Postnikov (translated
from the Russian). Russian Tracts on Advanced Mathematics and
Physics, Volume VIII. Gordon and Breach, New York, 1962.
iii + 142 pages. U.S. $8.00.

This is a translation of an elementary Russian text containing
an introduction to Galois theory, together with the necessary group
theory. The usual theory of algebraic extensions is developed for sub-
fields of the complex field, and the Galois correspondence is established.
The question of the solvability of equations by radicals is treated for
equations over the rational field and then is extended to the general
equation over an arbitrary field of characteristic zero. In treating
the general equation over an arbitrary field, it is shown that a field
of rational functions possesses an algebraic closure, following
Ostrowski, by means of formal power series. There are no exercises.

The book is Volume VIII of a series "Russian Tracts on Advanced
Mathematics and Physics" put out by a New York publisher. Although
this publisher's name is the only one to appear on the dust jacket, on
opening the book one finds that it has, in fact, been produced and
published in India by the Hindustan Publishing Company. *

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* Editor's Note: Another translation of the book by Postnikov has just
been published by P. Noordhoff, Publisher, Groningen (Holland);
Price: $2.25. (Translator: L. F. Boron) Gordon and Breach have
stated in a letter that they have cancelled their arrangements with the
Hindustan Publishing Company. H. S.

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