1952-11

Book Notice

The Ohio Journal of Science. v52 n6 (November, 1952), 338
http://hdl.handle.net/1811/3984

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Concepts and Methods of Theoretical Physics. Robert B. Lindsay. D. Van Nostrand Co., Inc.

"This book is intended as an introduction to the methods of theoretical physics for students
who have had intermediate college courses in physical mechanics and electricity as well as
advanced calculus and elementary partial differential equations. As the title implies, the
emphasis is on the development and clear definition of physical concepts and the analysis of
methods rather than the detailed presentation of all the factual content of theoretical physics
which the student will naturally need in pursuing graduate physics to the doctorate. Attention
is focused on the postulational character of physical theories, and . . . the emphasis is primarily
on the physical meaning of the results of analysis rather than on the analysis itself." Thus, in
his preface, does Prof. Lindsay state the aims and level of his book. He achieves these aims
by his very clear exposition of the material, concrete examples, careful definition of all terms
and symbols, and by the use of numerous references, in footnotes, to direct the student's attention
to other treatments and original articles. The problems at the end of each chapter are approxi-
mately chosen and should give the student excellent review of the material covered in that
chapter.

The first half of the book deals with "particle" physics and proceeds from the treatment
of the single particle very logically to collections of particles and thence to statistical methods,
with thermodynamics treated as a deduction from physical statistics. A brief survey of quantum
mechanics closes this portion of the book. "Field Physics," the title of the last half of the book,
emphasizes the application of the field concept to deformable solids and fluids and to electro-
magnetic fields. Classical electron theory and special relativity are the closing topics.

Since Prof. Lindsay starts many of his topics (e.g., the concepts of mass) at an elementary
level, and intersperses the mathematics with a great deal of descriptive material, this book would
serve as an excellent text at the beginning graduate level; it would likewise be a desirable reference
book for graduate students and teachers of undergraduate courses in mathematical physics.

Howard N. Maxwell