

## BOOK REVIEWS

*What is Mathematics?* By Richard Courant and Herbert Robbins.  
London, New York and Toronto, Oxford University Press, 1941.  
19+521 pp. \$5.00.

Professor Courant is too expert a hand at mathematics to attempt a formal definition of the subject. Instead, he and his collaborator offer "an elementary approach to ideas and methods," from which the reader who persists to the end may draw his own conclusions. It will be interesting to American teachers and students to forecast what a few of those conclusions may be.

First, as to the material presented. Roughly, the topics treated cover the usual superior undergraduate course in mathematics through the calculus, with glimpses of such things as Riemannian geometry and Plateau's problem beyond the customary curriculum. It is a misapprehension, under which some authors not acquainted at first hand with mathematics as taught in the better colleges labor, that mathematics for the American undergraduate ends with the calculus, or at farthest with an introduction to differential equations. It does not; quite detailed courses in the theory of algebraic equations, the theory of numbers, projective geometry, both synthetic and analytic, modern plane elementary geometry, also occasionally non-Euclidean geometry, are offered and taken; and in some of the undergraduate schools of the larger universities a course in the theory of functions of a complex variable is a commonplace, as also is a thorough introduction to mechanics. So the average student or graduate of the better college courses in mathematics will not be wholly unprepared to appreciate the numerous illuminating sidelights which this book offers on what he already knows; nor will he be entirely blind to the attractions of things which he may see here for the first time. All this sums up to the opinion that the book is one for inspirational collateral reading, rather than a detailed manual for the mastery of any one of the topics it treats. The hypothetical layman who remembers a little of what he learned in college ten to fifty years ago will find the book both stimulating and demanding.

In the method of presentation, at least, there is something new and interesting for nearly every topic, if only a brief note calling attention to significant progress made within the past decade, or an excellent drawing making textual comment all but superfluous. A sound pedagogical strategy ensnares the reader at the outset (pp. 1-51) in the serenely useless properties of the common whole numbers,