Mathematics for the Physical Sciences, by H. S. Wilf. John Wiley and Sons, Inc., New York, 1962. xii + 284 pages.

This book presents an excellent introduction to what is usually called classical mathematics. It covers a wide variety of subjects in a short space and does it in an admirable way without letting the interest of the reader flag.

The book contains seven chapters. Chapter I introduces the reader to vector spaces and matrices. The Cayley-Hamilton Theorem is proved only for diagonalisable matrices, but enough ground is covered to enable the author to prove the Perron-Frobenius Theorem.

Chapter II deals with orthogonal functions and an introduction to trigonometric series. The important properties of the classical orthogonal polynomials are treated under the caption "Special Polynomials". The chapter includes a brief account of Gauss Quadrature and the exercises refer to the author' s own contribution to quadrature on an infinite interval. One would have liked more space devoted to this chapter so that it could be made more "meaty".

Chapter III, on roots of polynomial equations, covers all the ground regarding Budan-Fourier rule, Sturm Sequences and Newton' s sums of powers of roots. The inclusion of the Erdős-Turán Theorem and some theorems on bounds of roots make the chapter more useful and interesting. The graphical illustration of the Gauss-Lucas Theorem is a welcome addition.

Chapter IV on Asymptotic Expansions follows the lead of de Bruijn' s excellent book on the subject. Chapter V on ordinary Differential Equations contains an excellent account of the proof of Picard' s theorem so often omitted in many text-books. The introduction of Wintner' s theorem and the inclusion of sections on truncation error and predictor-correcter formulas increases the utility of the chapter. The chapter closes with a discussion of the Gamma function and the Bessel' s equation.

Chapter VI deals with conformal mapping and includes a proof of the Riemann mapping theorem. The last chapter on Extremum Problems deals with the Lagrange' s method of multipliers, a brief sketch of the calculus of variations and the simplex algorithm in linear programming. The chapter closes with a brief discussion of best approximation by polynomials in the sense of Tchebicheff.

The exercises selected are excellent. The overall impression one gets is that the book is a useful addition to the literature and can be used with profit on a 2 semester course at graduate level. A careful teacher can always add more material to the chapters he likes and an industrious student will gain much by first working out the problems.

One would have liked the author to include more interesting material from current journals.

The omission, in the references, of Walsh's important work on 'The Location of Critical Points' seems to be an oversight. Another inclusion which the reviewer would have liked in chapter 2 is H. Delange's result regarding distribution of the nodes in Tchebicheff-Bernstein Quadrature formula for $n \geq 10$, which would perhaps have increased the interest of the chapter without much loss to its brevity.

There are very few printing errors and these are minor ones which the reader can easily correct. Thus on page 24, line 10, c_{n_1} should be read c_n, on page 34 bottom $\lambda^2_{1\nu}$ should be $\lambda^{2\nu}_1$, and on page 98 at one place 'Huritz' should be 'Hurwitz'.

A. Sharma, University of Alberta (Calgary)

Proceedings of the fifth Canadian Mathematical Congress, Université de Montréal, 1961. Edited by E. M. Rosenthall. University of Toronto Press, Toronto, 1963. x + 220 pages. $6.00.

Apart from the usual list of names of the participants of the seminar, reports on various conferences on the teaching of mathematics etc. the volume contains the following articles of mathematical interest: R. L. Jeffery "Derivatives and integrals with respect to a base function" (Presidential address); Ch. Ehresmann "Structures feuilletées"; A. Erdélyi "An extension of the concept of real number"; L. Henkin "Mathematics and Logic"; I. Sneddon "The application of mathematics to biology and medicine" (Invited lectures). There are also the abstracts of nine contributed papers.

H. S.

Décomposition des lois de Probabilités, par Y. V. Linnik. Gauthier Villars, Paris 1962. vi + 294 pages. 55 F.

Il s'agit de la traduction française de l'édition russe parue en 1960.

Voici la nature des problèmes étudiés: Une variable aléatoir x donnée peut-elle être la somme de variables aléatoires indépendantes? Dans les cas où elle peut l'être, étudier les relations entre la nature de la loi de x et la nature des lois de ses composantes indépendantes. Ces problèmes s'étudient à l'aide de la notion de fonction caractéristique et on est ramené à l'étude de la décomposition de la fonction caractéristique $\varphi_x(t)$ de x en produit de fonctions caractéristiques. L'appareil

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