For any absolutely irreducible variety V_n, and for each value of a $(0 \leqq a \leqq n)$, there exists a *base* $V_a^{(1)}, \cdots, V_a^{(k)}$ such that any V_a on V_n satisfies an equivalence

$$\rho V_a \sim \rho_1 V_a^{(1)} + \cdots + \rho_k V_a^{(k)},$$

where $\rho, \rho_1, \cdots, \rho_k$ are integers $(\rho \neq 0)$. No attempt is made to prove this "theorem of the base" in its full generality, but various methods are suggested while proving it for quadrics (Chapter XIII) and for Grassmann varieties (Chapter XIV). These methods apply to varieties which admit transitive groups of automorphisms.

The chapter on quadrics is particularly welcome for its clarity and completeness. Here it is shown, for instance, that the S_d's on a non-singular quadric Q_{n-1} form a single irreducible system of dimension $(d+1)(2n-2-3d)/2$. The classical theory of "eight associated points" (the complete intersection of three ordinary quadrics Q_2) is generalized as follows: If $P_1=0, \cdots, P_r=0$ are the envelope equations of r points $(r \geqq 2n+2)$ such that any quadric Q_{n-1} through all but one of the points passes through the remaining one, then there exists an identity of the form

$$\lambda_1 P_1^2 + \cdots + \lambda_r P_r^2 = 0.$$

The chapter on Grassmann varieties includes applications to enumerative geometry. For instance, the theory immediately yields the interesting result (p. 366) that two quadrics Q_3 in S_4 have, in general, sixteen common lines.

The book closes with a few pages of Bibliographical Notes, giving due credit to Cayley, Castelnuovo, Enriques, Severi, Macaulay, Lefschetz, van der Waerden, Chevalley, Zariski, Weil and others. The authors have skilfully blended the work of these illustrious men with many original ideas of their own. Their generality of outlook inevitably makes the book somewhat difficult to read, and there are no diagrams. However, an excellent index enables the reader to find much of interest without going through all the details. The Cambridge University Press must again be congratulated on a superb job of printing.

H. S. M. COXETER

BRIEF MENTION

Introduction to the theory of distribution. By Israel Halperin. Based on Lectures by Laurent Schwartz. (Canadian Mathematical Congress, Lecture Series, No. 1.) University of Toronto Press, 1952. 33 pp.

This brief pamphlet is a prolegomenon, though not exclusively so, to volume 1 of Schwartz' own two-volume book, and thus it deals only with the general operational aspect of distributions, and not with the more toilsome (and less innovatory) Fourier analysis in open Euclidean space.

Our one criticism of the exposition is this—that Halperin follows Schwartz too closely in claiming the "Dirac function" all-out for the theory of distributions, whereas in fact the Dirac function has been used by other theories of representation of linear functionals to illustrate their points at issue with equal fitness.

But what the pamphlet sets out doing it does very well indeed, and although written compactly, it is readable and informative.

S. BOCHNER

Linear computations. By P. S. Dwyer. New York, Wiley, 1951. 12+344 pp. $6.00.

The central theme of Professor Dwyer's book is the computational solution of simultaneous linear equations and various allied topics; considerable emphasis is given to effecting these solutions in a practical computational way on a desk calculator. The text contains a wealth of material on this topic and should provide a valuable tool to the young student of applied mathematics who needs to undertake numerous problems within the compass of hand calculation.

The book differs markedly from other texts on classical computational methods in the singleness of its purpose. It is virtually self-contained in that it pre-supposes essentially nothing beyond a knowledge of high school algebra and builds up such theorems on matrices as are needed. Happily the author has not felt a need to sacrifice rigor for clarity.

The text opens with a quite careful and indeed painstaking elementary discussion of computation with approximate numbers and does not leave this topic until the student has received a thorough grounding in the basic notions of his craft. Only then does it proceed to the main theme. Again near the end of the book the author reemphasizes the approximate character of the subject by a careful discussion of the errors of linear computation.

The next two chapters are devoted to discussions of various exact methods for solution of a system of linear equations, i.e. all problems involving "round-off" are ignored; while the following chapter is concerned with some of the additional problems that arise when "round-off" is no longer ignored.

The principal linear problems discussed are these: solution of equations; inversion of matrices and consideration of the characteristic