historical evidence, he has given us not only detailed knowledge of the scenes of his own extensive field investigations but also insight as to directions that necessarily must be followed by investigators elsewhere. Although his studies have been systematic and inductive, they are a valuable guide to anyone interested in the processes of coastal change and deductions as to their consequences. It may be predicted that few scholarly reports on coastal investigations will appear without pertinent references to this valuable volume. A comprehensive bibliography would have strengthened the volume.

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Physics

The Propagation of Electromagnetic Waves in Plasmas. V. L. Ginzburg. Translated from the Russian edition (Moscow, 1960) by J. B. Sykes and R. J. Tayler. Pergamon, London; Addison-Wesley, Reading, Mass., 1964. xx + 535 pp. Illus. $14.75.

This is the second English translation of Ginzburg's Russian textbook, published in Moscow in 1960, that has been made available to American readers. The book is divided into eight sections. An introductory chapter precedes four chapters that are concerned with developing the theory of waves in unbounded equilibrium plasmas of increasing complexity: homogeneous isotropic, homogeneous anisotropic, inhomogeneous isotropic, and inhomogeneous anisotropic. The next two chapters apply this theory to the ionosphere and to solar and interstellar propagation of radio waves, and the last chapter presents an introduction to nonlinear phenomena.

The first translation, published in 1961, was greeted warmly because it filled such a conspicuous gap in our bound literature. Nevertheless, a number of serious shortcomings greatly impaired the book's usefulness. Those who are not familiar with the first translation may be interested in two reviews of it—*American Scientist* **50**, 325a (September 1962) and *Physics Today* **15**, 70 (October 1962).

The new translation has capably dealt with practically all of the faults of the previous one. The first transla-

tion was frequently awkward and sometimes grammatically incorrect as well as technically misleading—for example, the use of "strongly homogeneous electric field" when *strong, homogeneous electric field* was intended. It is obvious that the translators of the present volume were both bilingual and technically competent. The print of the new volume is of the highest quality, whereas in the first translation it was difficult to distinguish boldface (vectors) from lightface type, and to read small subscripts and superscripts. Another difficulty encountered in using the first translation, particularly as a reference source, was the lack of an index. The table of contents was brief, and somewhat cryptic, and therefore not too helpful unless one had a detailed knowledge of the book. This new translation has a reasonably complete index; the main fault that remains uncorrected is that names are not indexed (with the exception of certain classic names—for example, Debye and Cherenkov).

That the first translation was more of a transliteration than a translation was also indicated by the bibliography. The Western reader was given references to Russian literature, but there was no indication of whether English translations were available or where they might be available. This has been corrected by providing complete bilingual references. In addition, where no English translation is available, a supplementary reference may be given —for example, a reference to the Russian I. E. Tamm's *Fundamentals of the Theory of Electricity* also refers to the translation of Landau and Lifshitz's *Electrodynamics of Continuous Media.* The bibliography has been enlarged by some 200 references, principally covering the literature through 1962, and making up for the previous paucity of Western references. Unfortunately, these were added in proof and are not referred to in the text. Thus, approximately half of the 536 entries in the bibliography are of limited use. On the other hand, a considerable cross-pollination of work is available because the references are about equally divided between Russian work and Western work. The author notes in his preface to this English edition that in *Radio Waves in the Ionosphere*, by K. G. Budden, only one among some 250 references cites Russian work. We might note, however, that such American books as *Electromagnetic Waves in Stratified Media*, by J. R. Wait, and *Waves in Anisotropic Plasmas*, by Allis,

Buchsbaum, and Bers, do indeed maintain a broad international scope with respect to their derived material.

The author has added three appendices in which he deals superbly and completely with fundamental theorems relating to propagation and energy in dispersive media. Aside from rather superficial treatment in most of our standard graduate textbooks, the only reasonably complete discussions previously available have been in Landau and Lifshitz and in the excellent but difficult Allis, Buchsbaum, and Bers.

It is well to understand that this is a treatise concerned with fundamentals of wave propagation, albeit in a sophisticated approach. It does not consider bounded media or nonequilibrium plasmas. Thus, beams and beam-interactions are not treated. Effects of a finite temperature are developed, but in a relatively elementary way. These limitations undoubtedly reflect Ginzburg's primary interest in ionospheric physics and certainly do not detract from the book's excellence within its scope.

The proofreading on this volume must have been painstaking, for I noted astonishingly few errors. And not only is this translation superior in every respect to the first translation, but its price is only $14.75, contrasted with $38 for the first translation. This new translation definitely deserves a place on the plasma physicist's bookshelf.

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Applied Mathematics

A Course of Mathematical Analysis. vol. 2. A. F. Bermant. Translated from the Russian edition (Moscow, 1959) by Ian N. Sneddon. Pergamon, London; Macmillan, New York, 1963. xii + 374 pp. Illus. $9.

It might be mentioned at the beginning of this review that the number of pages (374) is not a true indication of the book's actual content because large parts of it appear in small print. This book, the second of a two-volume work (the first volume covers the requisite work on the theory of functions of one variable), consists of the following chapters—"Functions of several variables, differential calculus"; "Applications of the differential calculus"; "Multiple integrals and iterated integra-

tion"; "Line and surface integrals"; "Differential equations"; and "Trigonometric series."

Bermant writes in the foreword that the aim is to provide a complete course in mathematical analysis for students of applied science and technology. In this he succeeds admirably. All important properties and theorems (and a large number at that) are carefully explained. Of special advantage for the student is the incorporation of a large number of examples, all of them worked out in detail. The concise and lucid manner in which this book is written should make it a very useful textbook. Many topics seldom found in a work of this scope are discussed. The following example is only one of many that could be cited: In the last chapter, "Trigonometric series," there is not only the usual routine treatment and examples for Fourier series but also discussion of the standpoint of mean convergence, Parseval's theorem, Krylov's method to improve convergence of Fourier series, and the like.

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The Social Sciences

Social Science Research on Latin America. Report and papers of a seminar. Charles Wagley, Ed. Columbia University Press, New York, 1964. xiv + 338 pp. $4.

This book is a product of a seminar on the current status of research into Latin American affairs, held at the Center for Advanced Study in the Behavioral Sciences (Stanford, California) in the summer of 1963. It consists of an introduction and seven chapters dealing with the contribution made by the disciplines of geography, history, anthropology, political science, economics, and sociology. With the exception of the chapter on economics, all of the contributions are by North American scholars, and the emphasis is definitely on research done in this country.

There is in the United States a rather long tradition of scholarly interest in Latin American affairs. Great historians like Prescott, Bolton, and Bancroft wrote extensively on different periods of Central and South American history. The anthropologist Robert Redfield did important field work in Central America, mostly among the contemporary Maya, from the late 1920's to the early 1950's, and published works like *The Folk Culture of Yucatan* which are now classics in the field of ethnography. Wagley himself has done research on Latin American communities for many years. The geographer George McBride did important work, primarily on land tenure problems in Mexico and Chile, during the 1920's and the 1930's. Still, it becomes clear from Wagley's book that the field of Latin American studies has been very much neglected by North American scholars and in the universities. Only lately has considerable attention been paid to the field, largely as a result of the unrest created by the revolution in Cuba and the role of the United States in Latin American economic development programs. Anyone who has taught a course in Latin American social structure knows how hard it is to come by reliable and theoretically interpretable information about a large number of areas, ranging from the factual organization and operations of public administration agencies, social mobility, the composition and modes of operation of political parties, the distribution of power and influence among various social groups in the different countries, the factors that influence investment decisions, and so on.

There are, of course, obvious political and practical reasons why we should try to understand in some detail how Latin American societies operate. But Latin America also provides many challenging problems for the theoretically oriented student of social organization. The intricate systems of rank and status, on community and national levels, should be of great interest to the specialist in social stratification. The detailed study of political decision-making and administrative agencies should provide rich material for theories dealing with the sociological factors behind economic growth and stagnation. It would be easy to mention many more examples. There is some danger that North American research on Latin America will become too much policy-oriented, too much concerned with finding answers to pressing practical problems like how to introduce modern technology, how to promote community development, and so on. Such an approach would be self-defeating in the long run.

This book will be a very useful reference work for those who teach and do research on Latin American problems. The various chapters describe how the concern with Latin American matters has developed within the disciplines represented. They also describe much of the most important work that has been done and contain many suggestions for future research required to fill some of the most blatant gaps in our knowledge. There are, however, important items missing from the bibliographies. Thus, the work done in Chiapas, Mexico, by scholars from Harvard and Stanford —Evon Z. Vogt, A. K. Romney, and others—is not mentioned in the chapter on anthropology, and the studies of communities in Guatemala, by Benjamin D. Paul and Melvin Tumin, are not cited. In the chapter on economic research the work of Edmundo Flores, a leading Mexican agricultural economist who has specialized on the land reform question, is not noted.

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Control Theory

Disciplines and Techniques of Systems Control. John Peschon, Ed. Blaisdell (Ginn), New York, 1964. xii + 547 pp. Illus. $12.50.

The theory of systems control has developed considerably during the past decade. Although there is no sharp distinction between the various aspects of control theory, more sophisticated and specialized mathematical techniques are being used; communication has thus become difficult between specialists in otherwise closely related fields. One may distinguish three major branches that stem from control theory: optimization of stochastic systems, nonlinear systems, and optimization of deterministic systems. This division is apparent in *Disciplines and Techniques of System Control,* edited by Peschon. Other areas of research where techniques are highly specialized, such as sampled data systems, or which are only now being investigated, such as learning systems, are not covered in the book.