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.

RICHARD J. RUSSELL
Coastal Studies Institute,
Louisiana State University

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 translation 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.

A. J. ESTIN
National Bureau of Standards,
Boulder, Colorado

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-