tions, with detailed captions written by Fundaburk or quoted from appropriate technical literature.

The text provides a reliable survey of Southeastern archeology but does not contribute new data or interpretations. The illustrations, however, are exciting even to specialists on the Southeastern Indians. Fundaburk searched for them in a large number of private collections and obscure museums, as well as in the major museums. She found good examples of typical artifacts and many remarkable pieces not previously illustrated or described. The specimens are well identified and scrupulously documented, and the photographs are excellent and clearly reproduced. Perhaps the most remarkable feature of the book is that Fundaburk was entirely unknown to Southeastern archeologists before she began her research for this work. With the appearance of her book she has gained their respect and admiration, not only for the obviously great amount of time and expense it involved but also because of the discernment evident in her interpretations.

A number of audiences will find this book useful. Southeastern archeologists will be particularly pleased with the numerous artifacts described and illustrated for the first time, especially those from Alabama, a state where little serious work in archeology has been done. Amateur archeologists and "Indian relic" collectors will like the large number of illustrations and will learn from the picture captions and the text. Artists and connoisseurs of primitive art now have a good source of Southeastern Indian motifs and designs and a striking demonstration that the prehistoric art of this area often equals better-known styles of primitive art in interest and value in terms of modern Euro-American esthetic tastes. Public and school libraries will find this book to be a reliable and readable addition to their reference works on Indians.

WILLIAM C. STURTEVANT
Smithsonian Institution, Washington, D.C.

Pharmacology in Medicine. A collaborative textbook. Victor A. Drill, Ed. McGraw-Hill, New York, ed. 2, 1958. xi + 1273 pp. $19.50.

This second edition attests the success of multi-authorship in a text on pharmacology. As with internal medicine, the increased scope of the field makes authorship by one or two individuals almost too demanding in comprehensive volumes. In the more than 1200 large pages (the weight of the volume is about five pounds) the burden has been spread among some 85 authors, most of them senior professors of pharmacology. The result is an excellent and detailed coverage of the field.

The type is clear and pleasant; there are two columns to the page for easier reading; and tables, structural formulas, and pertinent references are plentiful. The book will have appeal both to workers in pharmacology and to many others who seek readable presentations in specific areas.

WINDSOR CUTTING
Department of Medical Microbiology, Stanford Medical School, Stanford University

Exploring the Atmosphere's First Mile. vol. I, *Instrumentation and Data Evaluation*; vol. II, *Site Description and Data Tabulation*. Proceedings of the Great Plains Turbulence Field Program, 1 August to 8 September 1953, O'Neill, Nebraska. Heinz H. Lettau and Ben Davidson, Eds. Pergamon Press, New York and London, 1957. xiv + 578 pp. Illus. 2 vols., $20.

In the summer of 1953, meteorologists from ten universities and five government laboratories joined in the Great Plains Turbulence Field Program, the most intensive observing program to which the atmosphere has ever been subjected. An area near O'Neill, Nebraska, was chosen for the program. This area is said to be the flattest site in the flattest state in the flattest region of the United States. Lettau and Davidson, the leaders of the program, have edited this report, which has been written by about thirty-five of the participating scientists. The purpose was to describe the state of the lower part of the atmosphere in sufficient detail to make possible accurate calculations of turbulent transfer of heat, momentum, water vapor, and other gases and pollutants. The ultimate purpose was to achieve an accurate theory of atmospheric turbulence which would provide explicit data on the dependence of evaporation on wind speed, radiation, and the nature of the surface; which would express the warming or cooling of the air in terms of similar factors; which would specify the characteristics of the turbulent motions by the static stability and the configuration of the boundary, and so on.

Volume 1 contains accounts of the synoptic observing program, subsoil measurements, interface measurements, mast profile observations, fluctuation quantities, and free-air observations, plus a general introduction and a summary of some of the results of calculation. Volume 2 contains summaries of the data taken in seven observation periods totaling 171 hours. Additional data are on file at the Geophysical Research Directorate and at the cooperating universities. Many of the participating scientists have been working since 1953 in reducing the data and in applying the results to theory. Testing of theories will be greatly facilitated by publication, and we may expect these volumes to be exploited like a productive gold mine for years.

The most dramatic achievement of the program was the discovery of the low-level jet, a high-speed layer of air that is observed at night at a height of about 500 meters above the ground. This discovery has stimulated wide discussion, and Blackadar and Buajitti have been able to explain the phenomenon as an inertial oscillation resulting from diurnal changes in eddy viscosity.

Another development of great interest was the field testing of the sonic anemometer, applied to the problem of direct measurement of turbulent heat transfer.

The part of the program which lay at the heart of the undertaking—observations of vertical profiles of wind, temperature, and humidity—has been somewhat disappointing. Although observations were made on a much more intensive scale than ever before, the calculations reflect the same stubborn sources of error, and the various independent methods of calculating evaporation and heat transfer do not agree as closely as had been hoped. The profiles of vapor pressure are particularly unreliable.

A second field program, designed to measure directly the diffusion of gas and to relate these measurements to profiles of wind, temperature, and humidity, was carried out during the summer of 1956 at the same location. The report of this program is not yet available.

ROBERT G. FLEAGLE
Department of Meteorology and Climatology, University of Washington

General Diagnosis and Therapy of Skin Diseases. An introduction to dermatology for students and physicians. Hermann Werner Siemens. Translated from the German by Kurt Wiener. University of Chicago Press, Chicago, 1958. vii + 324 pp. Illus. $10.

The author's method of introducing dermatology to students and physicians is as revolutionary as would be the case if modern pedagogy returned to syllabication as an aid in the teaching of spelling, rather than insisting on an initial grasp of each word as a whole. Through the medium of close-up photography Siemens has made a unique presentation of the elements that must be observed and understood in order to diagnose and treat diseases of the skin. Each minute

change in the gross pathology has not only been clearly described but has also been illustrated by black-and-white photographs of a quality surpassing that of the average color photograph.

Siemens planned a new method of presentation of clinical dermatology, outlined the work in detail, and then carefully sought clinical material to illustrate each point. The continuous cooperation and contributions, over a 25-year period, of an excellent clinical photographer, J. J. van der Walle, made it possible to record photographically the necessary close-up detail from clinical material as it became available, rather than comb files later for the best existing photographs or borrow extensively from colleagues' collections. There are 398 photographs and 15 drawings that illustrate the detail in individual lesions and the grouping, nuances, and modifications of lesions during the course of disease.

Not only is Siemens' approach to diagnosis different because of his emphasis on detail but his handling of therapy is also unique, because of his emphasis on the need for reaching a maximal dosage in each case in order to guard against later recurrence. The application of this concept has previously been limited to anthralin and a few other medicaments. Combination of experimental method with the usual pragmatic approach is advocated by the author in handling each patient. He includes a finely detailed description of reactions to treatment.

Hermann Werner Siemens is professor of dermatology and venereology at the University of Leiden, Holland. His book has been ably translated into English by Kurt Wiener of Milwaukee, Wisconsin, at a time of reawakened interest in dermatological morphology.

LEON H. WARREN
Clinical Investigation Department,
Parke, Davis and Company

Gmelins Handbuch der Anorganischen Chemie. *Systematik der Sachverhalte,* 1957, $17.28; system No. 28: *Calcium,* pt. B, sec. 2, 1957, xvi + 391 pp., illus., $52.56; system No. 60: *Kupfer,* pt. B, sec. 1, 1958, xxvii + 624 pp., illus., $83.76. Verlag Chemie, Weinheim/Bergstrasse, Germany.

The *Systematik der Sachverhalte,* or systematic subject-matter index, in which the entries are given in both English and German, gives the basis underlying the arrangement of material in the *Gmelin Handbook.* The terms used were developed over a period of more than thirty years of working on the eighth edition of the *Handbook.*

The index serves as a classification guide to the scientific archives of the Gmelin Institute and contains all the subject headings used in classifying the material falling within the scope of the Gmelin literature coverage.

The volume on calcium contains the descriptions of compounds of calcium with hydrogen, deuterium, oxygen, nitrogen, fluorine, chlorine, bromine, and iodine and of compounds of those compounds with sulfur, up to the item dithionite. Detailed accounts are given of methods of preparation as well as data on chemical properties and behavior and various physical properties. The literature is covered to 1949.

The volume on copper is similar in nature to that on calcium. It considers the compounds of copper with the same combining elements but, in addition, includes compounds of copper with selenium and tellurium. The items go as far as copper tellurate. The literature is covered to 1949 and, in some cases, to 1954.

RALEIGH GILCHRIST
Division of Chemistry,
National Bureau of Standards

Integral Equations. And their applications to certain problems in mechanics, mathematical physics and technology. S. G. Mikhlin. Translated from the Russian by A. H. Armstrong. Pergamon Press, New York and London, 1957. xii + 338 pp. $12.50.

The translator has done his best, and on the whole he has done it well. However one sympathizes with him when he asks the reader's indulgence for inadvertent errors in the translation, particularly for any misspelling of proper names, incorrectly transliterated back to their native alphabet. Such a confession of ignorance casts a poor reflection on the publishers of a series on pure and applied mathematics, who could surely have found someone to do the necessary checking. A good mathematical book, whatever its topic, is a work of art, not to be mutilated by poor spelling of mathematicians' names.

It is true that this book in no way attempts to be a work of art. It is strictly practical in its object and outlook, and it is for strictly practical reasons that the gaps in the intuitive theory of the first edition have been filled, so that this theory now has the standard L_2 background, although it makes no attempt to go beyond this. However, it is still a good book. Its heart lies in the applications, which constitute 60 percent of the subject matter and are extremely detailed. The author doubtless feels, and there is much to support this view, that the right way to study integral equations is to go in great detail into their applications—into the Dirichlet problem, potential theory, the biharmonic equation, and the like. This approach goes a long way in making up for the lack of fire in the somewhat uninspired and standardized treatment of the theory. It is a book, in brief, from which the reader is likely to gain very valuable insight into the connections with older problems of analysis and mathematical physics and which will make him want to study further the connections with newer trains of thought.

L. C. YOUNG
Department of Mathematics,
University of Wisconsin

Handbuch der Physik. vol. XVI, *Electric Fields and Waves.* S. Flügge, Ed. Springer, Berlin, 1958. vii + 753 pp. Illus. DM. 158.

This volume contains five articles. The first one, "Static fields and stationary currents," by G. Wendt, treats the theory of electrostatic and magnetostatic fields of charges and currents. General theory as well as analytical, numerical, graphical, and experimental methods of solving field problems are covered. Many interesting and useful problems are solved, extensive use being made, for instance, of the Schwarz-Christoffel transformation.

The second article, "Quasi-stationary and non-stationary currents," by Ronald King, starts with the essentials of electromagnetic theory. Then follow coupled systems and transmission line and antenna theory. Many examples are worked out, including loop antennas, both shielded and unshielded.

The third article, "Electromagnetic wave guides and cavity resonators," by F. E. Borgnis and C. H. Papas, treats transmission line analogy, cylindrical and miscellaneous wave guides, slow wave and wave-guiding structures, wave-guide junctions, and cavity resonators. In the words of the authors, this was written for the reader who needs to acquire sufficient theoretical background to read pertinent research literature.

The fourth article, "The propagations of electromagnetic waves," by H. Bremmer, treats the propagation of electromagnetic waves through free space and includes an extensive treatment of antenna theory, including focusing of antenna radiation by lenses and mirrors, and the transmission of electromagnetic waves through curved atmospheres, with particular reference to transmission and diffraction phenomena in the earth's atmosphere.

The fifth article, "The dispersion and absorption of electromagnetic waves," by L. Hartshorn and J. A. Saxton, treats the experimental methods for the study of the behavior of matter under the action of electromagnetic waves of length greater than a few millimeters. This includes low- and high-frequency measure-