

bulent flow. Among the topics included in these chapters are Prandtl's boundary layer theory and the statistical and similarity theories of turbulence. Chapter IV takes up the discussion of heat transfer and diffusion; Chapter V surveys radiation and its micrometeorological significance. These first five chapters, slightly more than half of the book, thus lay the groundwork for the more detailed discussions in the latter part of the book—namely, the temperature field (Chap. VI), the wind structure (Chap. VII), and diffusion and evaporation (Chap. VIII).

A wealth of data has been accumulated, especially during and since the last war, on the distribution of wind, temperature, humidity, and the spread of particulate matter. Many of these observations cannot be compared with each other without great reservations because of the different observational techniques employed and because of the difficulty which meteorology shares with the other earth sciences—that instead of controlled laboratory experiments, information has to be gathered, with a few exceptions, by direct observation of natural phenomena as they occur. A critical collection of these data would be a highly desirable task, but it would be quite impossible within the scope of Professor Sutton's book. Consequently, he restricts the presentation of data to typical illustrative examples which demonstrate the successes and inadequacies of the various hypotheses aimed at a theory of the meteorological phenomena and the fields of meteorological parameters observed in the surface layers. Thus the last three chapters stress the theoretical advances in micrometeorology to which the author has contributed so much. Nevertheless, a great deal of observational information will also be found here for readers seeking mainly factual information on the behavior of the lowest atmosphere. The book contains more than 230 references to original articles which will guide the specialist to more detailed studies of any particular problem.

There are only a few minor points on which the reviewer would want to take issue with the author. It is not general meteorological practice to use the surface pressure as the standard for defining potential temperature (p. 10). As another example (p. 26), it would have been desirable in conjunction with the discussion of the permanence of irrotational motion in inviscid fluids to point out specifically that this applies only to the incompressible or barotropic fluids of classical hydrodynamics.

The book is very well written and the presentation of the quantitative, mathematically formulated theories is clear and easy to follow. The author expresses the hope that the book will help to increase the number of micrometeorologists. Since the book sums up in a well-organized presentation our present knowledge of the subject it will not fail to do so. Meteorologists in general, and specialists in micrometeorology and in fields for which the physics of the lowest atmospheric layers is important, will be grateful to the author for providing them with an authoritative account of a

very important branch of the science which is in rapid and vigorous development.

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Scientific Book Register

- Man's Foods.** Nutrition and environments in food gathering and food producing times. Lloyd B. Jensen. Champaign, Ill.: Garrard Press, 1953. 278 pp. \$4.50.
- Analytic Geometry and Calculus.** Lloyd L. Smail. New York: Appleton-Century-Crofts, 1953. 644 pp. and appendices. Illus. \$5.50.
- Problems of Infancy and Childhood.** Transactions of the Sixth Conference, March 17-18, 1952, New York. Milton J. E. Senn, Ed. New York: Josiah Macy, Jr. Fdn., 1953. 160 pp. \$2.50.
- Principles of Modern Acoustics.** George W. Swenson, Jr. New York-London: Van Nostrand, 1953. 222 pp. Illus. \$4.00.
- Stochastic Processes.** J. L. Doob. New York: Wiley; London: Chapman & Hall, 1953. 654 pp. \$10.00.
- The Dynamical Character of Adsorption.** J. H. de Boer. New York: Oxford Univ. Press, 1953. 239 pp. Illus. \$6.00.
- A Textbook of General Botany.** 5th ed. Gilbert M. Smith et al. New York: Macmillan, 1953. 606 pp. Illus. \$6.25.
- Introduction to the Theory of Statistics.** Victor Goedicke. New York: Harper, 1953. 286 pp. Illus. \$4.50.
- Prehistoric Settlement Patterns in the Virú Valley, Perú.** Smithsonian Institution, Bureau of American Ethnology, Bull. 155, 1953. Gordon R. Willey. Order from Supt. of Documents, GPO, Washington, D. C. 453 pp. Illus., maps, and plates. \$4.00.
- Elements of Cartography.** Arthur H. Robinson. New York: Wiley; London: Chapman & Hall, 1953. 254 pp. Illus. \$7.00.
- Manual of Comparative Anatomy.** 2nd ed. Osmond P. Breland. New York-London: McGraw-Hill, 1953. 256 pp. \$4.50.
- The Official Preparations of Pharmacy.** 2nd ed. Charles Oren Lee. St. Louis: Mosby, 1953. 544 pp. Illus. \$5.50.
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- Cellulose: The Chemical That Grows** Williams Haynes. Garden City, N. Y.: Doubleday, 1953. 386 pp. + plates. \$4.00.
- The Bile Pigments.** C. H. Gray. London: Methuen; New York: Wiley, 1953. 142 pp. Illus. \$1.75.
- Liver Injury.** Transactions of the Eleventh Conference, April 30 to May 1, 1952, New York. F. W. Hoffbauer, Ed. New York: Josiah Macy, Jr. Fdn., 1953. 265 pp. Illus. \$4.00.
- Radioisotopes in Industry.** John R. Bradford, Ed. New York: Reinhold, 1953. 309 pp. Illus. \$8.00.
- Progress in the Chemistry of Fats and Other Lipids,** Vol. 1. R. T. Holman, W. O. Lundberg, and T. Malkin, Eds. New York: Academic Press; London: Pergamon Press, 1952. 186 pp. Illus. + plates. \$7.00.
- Encyclopedia of Chemical Reactions,** Vol. V. C. A. Jacobson, Ed. and Compiler, with assistance of Clifford A. Hampel and Elbert C. Weaver. New York: Reinhold, 1953. 787 pp. \$15.00.