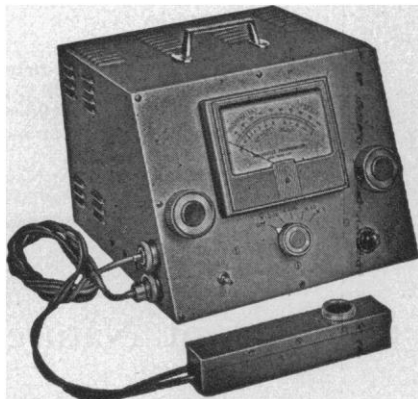


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## Miscellaneous Publications

**Forest Statistics for Central Maryland.** Wayne G. Banks. 19 pp. + map. **Forest Statistics for New York, Forest District No. 3.** 19 pp. Northeastern Forest Expt. Station, USDA, Upper Darby, Pa., 1953.

**Frequency Analysis of Hydrologic Data with Special Application to Rainfall Intensities.** Bull. Ser. No. 414. Ven Te Chow. Univ. of Illinois Engineering Expt. Station, Urbana, 1953. 80 pp. Illus. 80¢.

**The Fungal Diseases of Sal (*Shorea robusta Gaertn.*).** Pt. 1. Indian Forest Records, Mycology Ser., Vol. 1, No. 2. K. Bagchee. Manager of Publications, Delhi, India, 1953. 23 pp. + plates. 2s.

**Further Studies of the Physical Interactions between Tropical and Temperate Latitudes.** Section of Meteorological Physics, Tech. Paper No. 1. C. H. B. Priestley and A. J. Troup. Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia, 1954. 22 pp. Illus.

**Genes, Mice and Men.** A quarter-century of progress at the Roscoe B. Jackson Memorial Laboratory. The Laboratory, Bar Harbor, Maine, 1954. 43 pp. Illus.

**Gluing Techniques for Beech.** Beech Utilization Ser. No. 5. W. Z. Olson and R. F. Blomquist. 20 pp. **Beech for Veneer and Plywood.** B.U.S. No. 6 H. O. Fleischer. 24 pp. Illus. **Beech for Flooring.** B.U.S. No. 8. E. A. Lefkof. 11 pp. Illus. Northeastern Forest Expt. Station, USDA, Upper Darby, Pa., 1953.

**Guide des Centres Nationaux d'Information Bibliographique** (In French). UNESCO, Paris, 1953 (Order from Columbia Univ. Press, New York 27). 68 pp.

**Health Inquiry: The Toll of Our Major Diseases—Their Causes, Prevention, and Control.** Preliminary Report. Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C., 1954. 206 pp.

**Index to Schoolcraft's "Indian Tribes of the United States."** Smithsonian Institution, Bur. of American Ethnology Bull. 152, 1954. Compiled by Frances S. Nichols (Order from Supt. of Documents, GPO, Washington 25, D.C.). 257 pp. \$1.25.

**Interrelations of Cultures: Their Contributions to International Understanding.** Collection of intercultural studies. Richard McKeon *et al.* UNESCO, Geneva, 1953. (Order from Columbia Univ. Press, New York 27). 387 pp. \$2.

**Studies on Fish Preservation at the Contra Costa Steam Plant of the Pacific Gas and Electric Company.** Fish Bull. No. 92. James E. Kerr. California State Fisheries Laboratory, San Pedro, 1953. 66 pp. Illus.

**Surface Water Resources of Iowa, Oct. 1, 1942 to Sept. 30, 1950.** Water-Supply Bull. No. 3. Samuel Mummey, Jr. Iowa Geological Survey, Iowa City, 1953. 583 pp. Illus.

**Tlailco and the Pre-Classic Cultures of the New World.** Viking Fund Publications in Anthropology, No. 19. Muriel Noé Porter. Wenner-Gren Foundation for Anthropological Research, New York 21, 1953. 104 pp. Illus. + plates. \$2.50.

**Uruguay, Vol. II.** Scientific institutions and scientists of Uruguay. UNESCO, Montevideo, 1953. 259 pp.

**Waterfowl of North Dakota.** Paul A. Johnsgard. North Dakota Institute for Regional Studies, N. Dak. Agric. Coll., Fargo, 1953. 16 pp. Illus. Free.

**Zein (Corn protein): An Annotated Bibliography, 1891-1953.** Bibl. Ser., Bull. No. 7. Dorothy M. Rathmann. Mellon Institute, Pittsburgh, Pa., 1954. 118 pp.

theory, Max Planck, who in 1906 first obtained the relativistic equations of motion.

Planck's development of his radiation formula is also an interesting story. His first derivation in 1900 was based purely on thermodynamical arguments, and he later introduced the quantum hypothesis to provide a sounder theoretical basis. But Planck was never happy with this hypothesis and spent many years in fruitless efforts to revise it so as to avoid its apparent conflict with Maxwell's electrodynamics. Ultimately, however, his "second" and "third" theories (1911 and 1914, respectively) were swept away by the quantistic avalanche he himself had started.

Probably the most important theme of the book is that the great and "radical" theories were often the fruitful acceptance of an earlier suggestion or, more commonly, a successful amalgamation of various aspects of currently competing theories. This in no way detracts from the genius of the great pioneers, but it gives the advance of science a more orderly and evolutionary character. Thus, for example, the spin of the electron had been suggested by A. H. Compton in 1921, 4 years before Goudsmit and Uhlenbeck's celebrated paper. Also, Bohr's atomic theory is described by Whittaker as being based on nine fundamental principles, the first eight due to Conway, Nicholson, Rutherford, Ritz, Planck, and others, and the ninth, the renunciation of any classical explanation of electronic transitions, the one new element that Bohr added to create a successful theory.

An apparent exception was Heisenberg's matrix mechanics, although even here there is some connec-

tion with Landé's theory of the "virtual orchestra." The book ends with two chapters on the parallel development of this theory and Schroedinger's wave mechanics, their astonishingly rapid early successes, the demonstration of their equivalence by Schroedinger and by Eckart, and their connection with classical theory and with the older Sommerfeld-Wilson quantum theory.

Let no one be deceived by the foregoing into thinking that this work is merely a chronological and anecdotal history, or that it is light reading suitable for the layman. As a matter of fact, it contains considerable critical analysis and as much mathematical development as many textbooks in theoretical physics (for example, a 10-page exposition of Ricci's tensor calculus), and it is copiously documented with references to original papers on both the successful and the unsuccessful theories. It is a book written for those with sufficient background in mathematical physics to appreciate the significance of the discoveries discussed, to understand the mathematical treatment of them, and to enjoy the broader perspective it will undoubtedly give. To such people it can be heartily recommended.

E. T. KORNHAUSER

Department of Physics, Brown University

#### Reference

1. *A History of the Theories of Aether and Electricity, from the Age of Descartes to the Close of the Nineteenth Century*, Dublin Univ. Press, Longmans, Green, London, 1910. A revised and expanded edition, subtitled *The Classical Theories* and uniform with the present volume, was published in 1951 by Thomas Nelson.

## New Books

**Adaptation in Micro-organisms.** Third Symposium of the Society for General Microbiology, Apr., 1953. E. F. Gale and R. Davies, Eds. Cambridge Univ. Press, New York, 1953. 339 pp. Illus. + plates. \$6.

**Expédition Océanographique Belge dans les Eaux Côtières Africaines de l'Atlantique Sud (1948-49): Résultats Scientifiques.** Vol. IV, Fasc. 2: *Poissons: Téléostéens Malacoptérygiens*. Max Poll. 258 pp. Illus. + plates. Vol. IV, Fasc. 4: *Annélides Polychètes Non Pélagiques*. Pierre Fauvel. 56 pp. Illus. Institut Royal des Sciences Naturelles de Belgique, Brussels, 1953.

**The Mind and the Eye.** A study of the biologist's standpoint. Agnes Arber. Cambridge Univ. Press, New York, 1954. 146 pp. \$3.

**A First Course in Ordinary Differential Equations.** Rudolph E. Langer. Wiley, New York; Chapman & Hall, London, 1954. 249 pp. Illus. \$4.50.

**Treatise on Invertebrate Paleontology.** Raymond C. Moore, Ed. Pt. G: *Bryozoa*. Ray S. Bassler. Prepared under the guidance of the Joint Committee on Invertebrate Paleontology of the Paleontological Society, the Society of Economic Paleontologists and Mineralogists, and the Palaeontographical Society. Geological Society, New York; Lawrence, Univ. of Kansas Press, 1953. 253 pp. Illus. \$3.

**A Field Guide to Rocks and Minerals.** Frederick H. Pough. Houghton Mifflin, Boston, 1953. 333 pp. Illus. + plates. \$3.75.

**Microwave Lenses.** J. Brown. Methuen, London; Wiley, New York, 1953. 125 pp. Illus. + plates. \$2.

**Progress in Cosmic Ray Physics.** Vol. II. J. G. Wilson, Ed. North-Holland, Amsterdam; Interscience, New York, 1954. 322 pp. Illus. \$8.50.

**Ancient History of Western Asia, India and Crete.** Bedrich Hrozný. Trans. by Jindrich Prochazka. Philosophical Library, New York, 1953. 260 pp. Illus. + color plates + maps. \$12.

**Analysis of Deformation.** Vol. I. Keith Swainger. Chapman & Hall, London, 1954. 285 pp. Illus. 63s.

**Biological Conservation.** With particular emphasis on wildlife. John D. Black. Blakiston, New York, 1954. 328 pp. Illus. \$5.00.

**Methods of Theoretical Physics, Parts I & II.** Philip M. Morse and Herman Feshbach. McGraw-Hill, New York-London, 1953. 1978 pp. Illus. \$30.00 the set, \$15.00 a volume.

**Geography in the Twentieth Century.** Griffith Taylor, Ed. Philosophical Library, New York; Methuen, London, 1953. 661 pp. Illus. + plates + maps. \$8.75.

**Laboratory Practice of Organic Chemistry.** 3rd ed. G. Ross Robertson. Macmillan, New York, 1954. 377 pp. Illus. \$4.00.

**Flow Properties of Disperse Systems.** Vol. V of *Deformation and Flow*. J. J. Hermans, Ed. North Holland Pub., Amsterdam; Interscience, New York, 1953. 445 pp. Illus. + plates. \$9.90.

**Dairy Cattle Feeding and Management.** 4th ed. H. O. Henderson and Paul M. Reaves. Wiley, New York; Chapman & Hall, London, 1954. 614 pp. Illus. \$6.50.

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The footnote bibliographies have been removed and historically significant literature and symposia appertaining to the subject material covered has been placed at the end of each chapter. A number of photomicrographs and other illustrative material have been added in the new edition. Since the undergraduate student is not primarily concerned with therapy, the authors have eliminated the chemotherapy section in their discussion of the various infections.

By CHARLES F. CARTER, B.S., M.D., Director, Carter's Clinical Laboratory, Dallas, Texas; and ALICE L. SMITH, A.B.M.D., Assistant in Pathology, Instructor in Microbiology and Pathology, Parkland Hospital, School of Nursing, Dallas, Texas.

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In this revision all chapters have been carefully studied. Where necessary, old material has been deleted and new material required to bring the volume up to date has been added. The general outline of the book remains the same as that of the first edition with the exception of an introductory chapter on the History of Microbiology. Included in this chapter are the "milestones" found at the end of the previous edition. Comparatively new developments which occupy the thought of microbiologists, such as the therapeutic use of gamma globulin, the activation of latent infections by the antibiotic drugs, the modern control of leprosy, and the more modern methods of disinfection and sterilization, have been included in this edition.

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## Meetings & Conferences

### June

- 25-29. Inst. of Aeronautical Sciences, New York, N.Y. (S. P. Johnston, 2 E. 64 St., New York.)
- 27-1. Inst. of Food Technologists, annual, Los Angeles, Calif. (C. S. Lawrence, 176 W. Adams St., Chicago 3, Ill.)
- 28-29. National Science Teachers Assoc., New York N.Y. (R. H. Carleton, 1201 16 St. NW, Washington 6, D.C.)
- 28-30. American Assoc. of Physics Teachers, Minneapolis, Minn. (R. F. Paton, Univ. of Illinois, Urbana.)
- 28-30. American Physical Soc., Minneapolis, Minn. (K. K. Darrow, Columbia Univ., New York 27.)
- 28-30. American Soc. of Heating and Ventilating Engineers, 60th semiannual, Swampscott, Mass. (Sec., ASHVE, 62 Worth St., New York 13.)
- 28-2. European Cong. of Gastroenterology, 4th, Paris, France. (A. Busson, 63 bis Rue de Varenne, Paris 7.)
- 28-3. National Education Assoc., annual, New York, N.Y. (L. W. Ashby, 1201 16 St. NW, Washington, D.C.)
- 29-3. International Conf. on Semiconductors, Amsterdam, The Netherlands. (H. J. Vink, Floralaan 142, Eindhoven, Netherlands.)
- 30-2. Heat Transfer and Fluid Mechanics Inst., Berkeley, Calif. (H. A. Johnson, Dept. of Mechanical Engineering, Univ. of California, Berkeley.)

### July

- 1-9. British Medical Assoc., Glasgow, Scotland. (BMA, Tavistock Square, London, WC 1.)
- 2-8. International Cong. of Oto-Neuro-Ophthalmology, 19th, São Paulo, Brazil. (C. de Rezende, Hospital das Clinicas, Avenida Ademar de Barros, São Paulo.)
- 2-14. International Cong. of Botany, 8th, Paris, France. (P. Chouard, 11, Rue de Val-de-Grace, Paris 5.)
- 6-9. American Home Economics Assoc., San Francisco, Calif. (Miss M. Horton, 1600 20 St. NW, Washington, D.C.)
- 7-10. American Physical Soc., Seattle, Wash. (J. Kaplan, Univ. of California, Los Angeles.)
- 8-9. International Union of Pure and Applied Physics, 8th, London, Eng. (H. A. Barton, 57 E. 55 St., New York 22.)
- 8-12. Conv. on Industrial Electronics, Oxford, Eng. (Sec., Brit. I.R.E., 9 Bedford Sq., London, W.C.1.)
- 10-15. Latin American Cong. on Gynecology and Obstetrics, 2nd, São Paulo, Brazil. (J. Ramos, Av. Brigadeiro Luiz Antonio, 278-80, São Paulo.)
- 11-14. American Soc. of Refrigerating Engineers, Seattle, Wash. (M. C. Turpin, 234 5 Ave., New York 1.)
- 13-17. Conf. on Defects in Crystalline Solids, Bristol, Eng. (H. A. Barton, 57 E. 55 St., New York 22.)
- 13-17. Cong. on Experimental and Theoretical Nuclear Physics, Glasgow, Scotland. (H. A. Barton, 57 E. 55 St., New York 22.)
- 15-17. International Symposium on Solid Particles in Astronomical Objects, Liège, Belgium. (P. Th. Oosterhoff, Leiden Observatory, Leiden, Netherlands.)
- 15-21. Pan American Cong. of Child Welfare and Pediatrics, 4th, São Paulo, Brazil. (J. Ramos, Av. Brigadeiro Luiz Antonio 278-80, São Paulo.)
- 16-21. International Conf. on Electron Microscopy, London, Eng. (F. W. Cuckow, Royal Cancer Hospital, London, SW 3.)

(See the May 21st issue for summer meeting lists.)