

lege students who take an introductory course in linguistics," and in keeping with this general purpose many, but not all, of the controversies in modern linguistics have been avoided. A wide range of topics is adequately covered; the only omission of any consequence is the lack of a cohesive chapter on semantics. In Hockett's view, semantics and phonetics are peripheral to the central grammatical, phonological, and morphophonemic systems. The grammatical system comprises an inventory of meaningful units (like the *boy--s walk--ed* in *boys walked*) and the arrangements in which they occur; the phonological system comprises the inventory of contrasting sounds (like the /bojz/ in *boys*) and the arrangements in which they occur; and the morphophonemic system is the code of correspondence rules between the grammatical and phonological systems (like the rules by which the plural *-s* is represented by /z/ in *boys* but by /s/ in *cats*).

In addition to discussions of these areas, with examples from a variety of languages as well as detailed analyses of English, Hockett includes presentations of language acquisition and change, the relationship of speech to writing, the esthetic use of language, and so forth. The final chapter on "Man's place in nature" is a particularly clear characterization of the differences between human language and other systems of communication, which, together with the short introductory chapter on the relationship between linguistics and other disciplines, will prove of most interest and benefit to nonlinguists.

In spite of whatever objections may be raised, this textbook will surely prove to be an excellent introduction for the next generation of students of linguistics and will probably be more widely used as such than Bloomfield's book. However, if, by virtue of this success, Hockett somehow looms larger than Bloomfield, it is only because he is able to sit on Bloomfield's shoulders.

SOL SAPORTA

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Farbenbestimmung in der Biologie. Parts I-VIII. Jiri Paclt. Fischer, Jena, Germany, 1958. 76 pp. Illus.

Paclt, one of the most famous biologists in Czechoslovakia, gives in this small book a general review of the technology and terminology of the colors used in the biological sciences, with the intention of forming an international basis for the terminology of colors based on a system of comparison.

The first chapter deals with the possibility of color distinction and points out that, of the effectively existing colors, only a relatively small part can be differ-

entiated. In subsequent chapters the author demonstrates that a decimal system for the determination of colors is the most useful one, and he compares this decimal system, based on the studies of Pavlovsky, with the older systems used generally today. He gives the general and theoretical background on which a colorimetric system can be built up. The conclusion is that only a comparative system seems to be useful for biological purposes.

After a discussion of the history of the terminology of colors, the author tries to provide an international system, because no one system existing today is entirely adequate. The existing systems—especially the Munsell System, the Horticultural Colour Chart (of the British Colour Council), the Répertoire de Couleur (of Oberthür and Dauthenay), and the Code Universel des Couleurs (of Séguéy)—still have to be used, preferably in combination.

The most useful part for English-speaking people is the dictionary of colors, in six languages—German, English, French, Italian, Russian, and Spanish. The nearly complete bibliography will enable the student to use the original literature.

This book develops nothing entirely new, but it is still useful because of the newly proposed terminology and the dictionary of colors, in six languages.

HANS PETER FUCHS

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Doctor Squibb. The life and times of a rugged idealist. Lawrence G. Blochman. Simon and Schuster, New York, 1958. xii + 371 pp. Illus. \$5.

The founder of the pharmaceutical house originally called "E. R. Squibb, M.D." was reared a Philadelphia Quaker. He was born in 1819 and graduated from Jefferson Medical College in 1845, during the excitement of the Mexican War. Despite the opposition of his church, which meant much to him, he acted on his grandmother Squibb's counsel—"Thee has only to decide which thee would serve—God and thy conscience or the monthly meeting"—and joined the Navy. Ten years later, after much experience at sea, followed by the almost singlehanded establishment of a drug manufacturing and control unit at the Brooklyn Navy Yard, he left to enter private business. Through the rest of his long life his all-encompassing interest was the manufacture of drugs and their honest representation. Although no longer a practicing Quaker—in fact he had been expelled for joining the Navy—he was obviously deeply concerned with commercial misrepresen-

tation of drugs and devoted to drug reform. In professional societies, legislative committees, and particularly in the pages of the *U.S. Pharmacopeia*, he was a prickly protagonist for proper standards and regulations.

This story of Squibb is a well-written study of a strong and independent personality, staunch against compromise—a characteristic of many of his Victorian contemporaries. He was against sin but wanted his full interest; he worked long hours and then wrote a full diary and was impatient when his wife was frivolous; he organized his family efficiently and was hurt when his sons had minds of their own. There was more than a little of the singleminded executive type so well drawn in *The Man in the Gray Flannel Suit* in the make-up of E. R. Squibb.

WINDSOR CUTTING

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Stanford University

Introduction to Meteorology. Sverre Petterssen. McGraw-Hill, New York, ed. 2, 1958. x + 327 pp. Illus. \$6.75.

This book is enjoyable to read and review. It is an elementary text on a discipline that is gradually coming into its own. And Petterssen is a master in telling the story of weather problems. Yet there is no sacrifice of accuracy in order to make things easy for the student. After a first run of 17 successful years, this second edition is thoroughly revised and brought up to date. The growth in subject matter is well reflected in the 91 added pages.

The book starts with a conventional review of the general structure of the atmosphere and of weather observations. Then the author takes us to the front of scientific endeavor in his treatment of mechanisms of cloud and precipitation formation. This includes a conservative statement on the artificial stimulation of precipitation.

The facts about the various events composing the weather—showers, thunderstorms, hail, tornadoes, and so forth—are well told and illustrated. The atmospheric wind systems, the air masses and fronts carried by them, and the cyclonic and anticyclonic eddies are discussed from the vantage point of one who has made major contributions in these areas. Petterssen is an expressive spokesman in these chapters for the Norwegian school of weather analysis, in which he grew up and whose triumphs he shared.

In the remainder of the work there has been a fortunate shift of emphasis from the first to the second edition. There is less material on weather maps and

weather forecasting and more on atmospheric processes and climatology. The climatic features of the globe are described in three chapters dealing with the temperature and precipitation regimes and relating the broad scheme of geographical distribution, as represented by the Koeppen classification.

Weather problems affect all walks of life. They are important in all phases of engineering and aviation. They govern agriculture, forestry, and conservation. Students in these fields should have a meteorological course. For such purposes one could hardly find a better book than Pettersen's. Budding meteorologists, too, will find it a good mentor.

H. E. LANDSBERG

Office of Climatology,
U.S. Weather Bureau

New Books

Epilepsy. Manfred Sakel. Philosophical Library, New York, 1958. 240 pp. \$5.

The Eye. A clinical and basic science book. E. Howard Bedrossian. Thomas, Springfield, Ill., 1958. 369 pp. \$11.

Food and You. Edmund Sigurd Nasset. Barnes & Noble, New York, ed. 2, 1958. 166 pp. \$1.25.

The Graftor's Handbook. R. J. Garner. Faber and Faber, London, ed. 2, 1958. 260 pp. 25s.

Guide to the Literature of the Zoological Sciences. Roger C. Smith. Burgess, Minneapolis, Minn. ed. 5, 1958. 214 pp. \$3.50. This guide is intended to acquaint the student with some useful sources of references and to help the student become acquainted with the chief works in his specialized field and related fields. It includes information on useful and recent bibliographies, rules for making a scientific bibliography, and suggestions for the scientific writer.

Introduction to Algebraic Geometry. Serge Lang. Interscience, New York, 1958. 271 pp. \$7.25.

The Motivation, Productivity, and Satisfaction of Workers. A. Zaleznik, C. R. Christensen, F. J. Roethlisberger. Graduate School of Business Administration, Harvard Univ., Boston, 1958. 464 pp. \$6.

Phosphorus and Its Compounds. vol. I, Chemistry. John R. Van Wazer. Interscience, New York, 1958. 967 pp. \$27.50.

The Plasma in a Magnetic Field. A symposium on magnetohydrodynamics. Rolf K. M. Landshoff, Ed. Stanford Univ. Press, Stanford, Calif., 1958. 135 pp. \$4.50.

The Politics of Despair. Hadley Cantril. Basic Books, New York, 1958. 287 pp. \$5.

Principles of Statistical Techniques. A first course, from the beginnings, for schools and universities. P. G. Moore. Cambridge Univ. Press, New York, 1958. 247 pp. \$3.75.

Progress in Crystal Physics. vol. I, Thermal, Elastic and Optical Properties. R. S. Krishnan. Viswanathan, Central Art Press, Chetput, Madras 31, India. 204 pp. Rs. 20.

Psychological Stress. Psychoanalytic and behavioral studies of surgical patients. Irving L. Janis. Wiley, New York; Chapman & Hall, London, 1958. 453 pp. \$6.95.

Psychopathology. A source book. Charles F. Reed, Irving E. Alexander, Silvan S. Tomkins. Harvard Univ. Press, Cambridge, Mass., 1958. 815 pp. \$12.50.

Radioactive Isotopes in Clinical Practice. Edith H. Quimby, Sergei Feitelbert, Solomon Silver. Lea & Febiger, Philadelphia, Pa., 1958. 451 pp. \$10.

Statistics of Extremes. E. J. Gumbel. Columbia Univ. Press, New York, 1958. 395 pp. \$15.

Stoichiometry. For chemical engineers. Edwin T. Williams and R. Curtis Johnson. McGraw-Hill, New York, 1958. 363 pp. \$8.

Structural Conversions in Crystalline Systems and Their Importance for Geological Problems. Special Paper 60. Wilhelm Eitel. Geological Soc. of America, New York 27, 1958. 197 pp.

Symposium on Information Theory in Biology. Gatlinburg, Tennessee, 29-31 October 1956. Hubert P. Yockey, Robert L. Platzman, Henry Quastler, Eds. Pergamon Press, New York and London, 1958. 430 pp. \$12.

Symposium on Protein Structure. International Union of Pure and Applied Chemistry, Paris meeting, 1957. Albert Neuberger, Ed. Methuen, London; Wiley, New York, 1958. 351 pp. \$7.75. This symposium under the general chairmanship of Professor Jean Roche was attended by more than 150 protein chemists. The papers presented are divided into the following sections: "General Problems and Methods"; "Specific Proteins"; "Proteolytic Enzymes"; "Ribonuclease"; "Tobacco Mosaic Virus"; "Other Proteins and Peptides."

Theory and Methods of Scaling. Warren S. Torgerson. Wiley, New York; Chapman & Hall, London, 1958. 473 pp.

Trace Elements. Proceedings of the conference held at the Ohio Agricultural Experiment Station, Wooster, 14-16 October 1957. C. A. Lamb, O. G. Bentley, J. M. Beattie, Eds. Academic Press, New York, 1958. 422 pp. \$12. This symposium on the role of trace elements in plants, animals, and microorganisms was held as a part of the diamond jubilee celebration of the Ohio Agricultural Experiment Station.

Transactions of the Conference on the Use of Solar Energy, the Scientific Basis. vol. I, The available energy. Measurement of the radiation. 135 pp. vol. II, Thermal processes. Part I, Section A, Flat-plate collectors. 145 pp. vol. II, Section B, High-temperature solar furnaces. Solar power. 265 pp. vol. III, Part II, Solar house heating. Solar water heating. Solar stoves. Solar distillation. 169 pp. vol. IV, Photochemical processes. 187 pp. vol. V, Electrical processes. 170 pp. Sponsored by Univ. of Arizona, Stanford Research Inst., and Assoc. for Applied Solar Energy, 31 October-1 November 1955, Tucson, Ariz. Edwin F. Carpenter, Ed. Univ. of Arizona Press, Tucson, 1958. \$12.50 per set.

What We Do Know about Heart Attacks. John W. Gofman. Putnam's, New York, 1958. 191 pp. \$3.50.

Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

Vibration and Shock Isolation—a Survey. National Standards Laboratory Tech. Paper No. 10. J. A. Macinate. 39 pp. *Tasmanian Farm Dams in Relation to Fish Culture.* Division of Fisheries and Oceanography Tech. Paper No. 4. 24 pp. Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia, 1958.

Microscopic Staining Techniques. No. 3. Edward Gurr. Edward Gurr, Ltd., Michrome Laboratories, London, S.W. 14, ed. 2, 1958. 62 pp.

Explorer IV—1958 Epsilon Orbital Data Series. Issue 3, 16 September 1958. Army Ballistic Missile Agency, Redstone Arsenal, Ala.; Smithsonian Astrophysical Observatory, Cambridge, Mass., 1958. 871 pp.

Kenya Wild Life Society, Report, 1957. Consular House, Coronation Avenue, P.O. Box 20110, Nairobi, Kenya, 1958. 106 pp.

Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, Twenty-ninth Annual Report. The Laboratory, Bar Harbor, Maine, 1958. 92 pp.

Immunization Information for International Travel. Publ. No. 384. Prepared by the Epidemiology and Immunization Branch, Division of Foreign Quarantine. Bureau of Medical Services, U.S. Public Health Service, Washington, rev. ed., 1958 (order from Supt. of Documents, GPO, Washington 25). 71 pp. \$0.30.

Field Trip Guidebook, St. Louis Meeting, 1958. Field Trip Committee, Geological Soc. of America, New York 27, 1958. 46 pp.

Homemaking Education Programs for Adults. Vocational Division Bull. No. 268. Home Economics Education Series No. 30. Office of Education, Washington, 1958 (order from Supt. of Documents, GPO, Washington 25). 62 pp. \$0.25.

Concept of the Pacific. Bernice P. Bishop Museum annual report for 1957. Bishop Museum Press, Honolulu, Hawaii, 1958. 31 pp.

Mémorial de la Météorologie Nationale. Contribution à l'étude du climat d'entre Loire inférieure et Gironde d'après des archives climatologiques inédites. No. 44. Paule Garenc. Météorologie Nationale, Paris, 1957. 197 pp.

Laboratory Instructions in Microbiology. Louis P. Gebhardt and Dean A. Anderson. Mosby, St. Louis, Mo., ed. 2, 1958. 261 pp. \$3.75.

Practice in Thinking. A laboratory course in introductory chemistry. Jay A. Young. Prentice-Hall, Englewood Cliffs, N.J., 1958. 92 pp. \$2.95.

Albertus van Beek, 1787-1856. Mededelingen der Koninklijke Nederlandse Akademie van Wetenschappen, vol. 21, No. 5. J. G. Van Cittert-Eymers. Noord-Hollandsche, Amsterdam, 1958. 36 pp. Fl. 3.

Investigations of Ring-Necked Pheasants. Tech. Bull. No. 1, July 1958. William B. Robertson, Jr. Division of Game Management, Springfield, Ill., 1958. 138 pp. Single copies free from Director, Department of Conservation.