

of democracy is the waste of money and talent when projects that should continue through decades are allowed to wither for lack of sustaining appropriations. The hit-and-run techniques that at times serve developmental research in the physical sciences will not do when we are dealing with secular processes. These processes furnish background, perspective, and context for the effective application of all science.

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**The Language of Social Research.** A reader in the methodology of social research. Paul F. Lazarsfeld and Morris Rosenberg, Eds. Free Press, Glencoe, Ill., 1955. xiii + 590 pp. Illus. \$6.75.

This reader is one of a growing list of books on social science methodology that have been published in the last several years. It represents the continuation of what seems to be an increasingly concerted effort to make explicit the design of social research and to codify social science procedures and techniques.

The volume is, on the whole, an excellent collection of papers. By being brought together, these papers are not only made more readily accessible, but they also take on a cumulative value as contributions to the development of more objective and rigorous social science research.

The work, however, contains many gaps and deficiencies, partly because it does not set out to cover all of social science method and partly because it reflects the present relatively primitive state of social science. The "Reader" does not attempt to cover such topics as sampling, questionnaire construction, and experimental design for which "there is already a standardized literature. It does not deal with mathematical techniques that require knowledge "beyond that which the average social scientist is likely to have." It excludes also consideration of topics whose "methodological implications have not yet been codified adequately at all." It purports to emphasize the "analysis of material which has been properly collected." The editors appropriately admit that the selections are not necessarily representative of the literature but were gathered in considerable measure from the work of "colleagues and junior associates of the senior editor" in his work at Columbia University. However, it may be noted that this does not detract from the apposite character or usefulness of the selections.

The materials written by the editors, while all too brief, together with the outline of the book, do give the work some measure of cohesion and provide, on the

whole, an adequate rationale for the selection of the readings. In a brief general introduction and short introductory statements to each of the six sections into which the volume is divided, a general conception of science is presented and the following major topics are treated: "Concepts and indices," "Multivariate analysis," "The analysis of change through time," "Formal aspects of research on human groups," "The empirical analysis of action," and "Toward a philosophy of the social sciences." Especially useful is the contribution of the editors to the clarification of the steps involved in the delineation of problems for research and in the analysis and interpretation of research results.

The volume is not a self-sufficient treatise on social science methodology. Its title is, therefore, rather too comprehensive in that it covers only a small part of the "language of social research." As a supplement to more comprehensive works on the philosophy of science and on social science method, it is, nevertheless, a useful contribution to the literature.

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**The Pharmacological Basis of Therapeutics.** Louis S. Goodman and Alfred Gilman. Macmillan, New York, ed. 2, 1955. xiii + 1831 pp. Illus. \$17.50.

There is a certain fascination in comparing the first and second editions of this book—the 14 years elapsed are paralleled by remarkable advances in many directions. The antibiotics, the newer adrenal steroids, adrenergic blocking agents, radioisotopes, and antihistaminics are all substances that were largely unknown at the time of the first edition.

The growth in the amount of subject matter has resulted in an increase in both the bulk and price of the book by about 50 per cent; it cannot be said that pharmacology has become much more comprehensible in terms of mechanisms during the last 10 years or so, but the fact that the authors have been able to encompass the multitude of new developments in their text bespeaks much in the way of organizational effort. This is a medical textbook, and as such its treatment ought to be directed toward practical ends; nevertheless there is much use made of Goodman and Gilman by research workers who are not primarily concerned with medicine, and it is therefore gratifying to find that the treatment of structure-activity relationships of various classes of drugs has been greatly expanded in this new edition. As was true in the first edition, the treatment of autonomic drugs is particularly outstanding, and I am also impressed with the

concise presentation of the vast literature connected with the adrenal steroids. The fact that a substance that was discovered as recently as aldosterone is covered in some detail is an indication of the continuous revision of the text that must have taken place up to the time of publication. There are a few errors: the partition coefficient is incorrectly defined, the structure of podophyllotoxin appears to be out of date, and it is somewhat surprising not to find serotonin listed. These minor errors in no way detract from the general impression that this is both a reference work and a textbook of the most reliable sort.

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**Advanced Calculus.** An introduction to classical analysis. Louis Brand. Wiley, New York; Chapman and Hall, London, 1955. xii + 574 pp. Illus. \$8.50.

The nature of this book is indicated by its subtitle, "An introduction to classical analysis." It differs from books on elementary calculus in two major respects: (i) in the emphasis given to definitions, theorems, and rigorous proofs; and (ii) in the inclusion of chapters on "Vectors" (Chapter 5), "Line integrals" (Chapter 8), "Uniform convergence" (Chapter 10), "Functions of a complex variable" (Chapter 11), and "Fourier series" (Chapter 12). Some other more advanced topics are treated briefly in sections of various chapters—for example, implicit function theorems and Lagrange multipliers with "Functions of several variables" (Chapter 4) and Green's and Stokes' theorems, with "Multiple integrals" (Chapter 9). As the author states, the book deals essentially with functions of a real variable. His purpose in including Chapter 11 is to complete the explanation of certain portions of real variable theory—for example, intervals of convergence for series—and to show the use of complex integration in computing certain real integrals.

The development of the real and complex number systems is sketched in Chapter 1. In Chapter 2 ("Sequences and series") some of the basic concepts of analysis are introduced in their simplest setting. Chapter 3 ("Functions of a real variable"), Chapter 6 ("The definite integral"), and Chapter 7 ("Improper integrals") are largely a review of elementary calculus, but with the different emphasis that I have mentioned. Only the Riemann integral is considered.

The book generally is on the usual level of courses in advanced calculus for undergraduates and beginning graduate students. It is better suited for those majoring in mathematics than it is for phy-

sicists or engineers because it lacks applications. There are many exercises, most of them quite straightforward, with answers compiled at the end. This feature doubtless will increase the appeal of the book to readers using it for self-study. The summaries at the ends of the chapters are another good feature. In my opinion, some additional suggestions for outside reading and mathematical report writing would enhance the usefulness of the book as a text.

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**Karl Patterson Schmidt Anniversary Volume in Honor of His Sixty-fifth Birthday.** Fieldiana: Zoology, vol. 37. Chicago Natural History Museum, Chicago, 1955. viii + 728 pp. Illus. + plates. \$10.

Appreciative accounts of Karl Patterson Schmidt by his administrative associates are followed in this book by 26 scientific articles, by 27 zoologists, on living and fossil animals from all five continents and several islands. Taxonomy, nomenclature, anatomy, geographic distribution, speciation, food habits, paleontology, and other aspects of vertebrates and invertebrates are dealt with.

In the past 30 years the advancing front of knowledge in taxonomy, phylogeny, and geographic distribution of animals—especially living animals—has lagged behind that in genetics, biochemistry, and microbiology. To consolidate and apply much of the information recently acquired in the last-mentioned fields, and to permit further advances in some of them, more precise knowledge of the taxonomy and natural history of most animal groups is now required. Consequently, the information in the Karl Patterson Schmidt volume is timely as well as basic in nature. From it we learn much about the natural relationships among the 80 species of snakes of the genus *Calamaria*, the northward limits of geographic range in Mexico of many neotropical bats, the 42 kinds (23 are new!) of obligate parasitic amblyopine beetles that live on rodents and marsupials; we also learn which of the nominal species of Columbian gallinaceous birds are valid and which are not, what foods are eaten by scores of kinds of fishes, and much about the species of fishes of the genus *Holocentrus* that are arranged according to the heretofore imperfectly known anatomical and functional relationships between the auditory bulla and swim bladder. In addition, we learn that the premaxillary fossa on the lower jaw of the living spectacled bear accommodates a pouch of the mouth cavity and is

not a place of attachment for a separate portion of the chewing musculature as the literature and our professors wrongly taught us about the closely related, extinct *Tremarctotherium*. Prevailing westerly winds acting on migrants account for the American origin of the bird fauna of Tristan de Cunha. Students of paleozoology will find in the volume well-illustrated and competently described missing links that make speculations unnecessary concerning the phylogeny of some lines of sea turtles, symmetrodont mammals, early crabs, and Devonian fishlike Heterostrachi that are useful in correlating discontinuous geologic deposits.

The basic nature of the original information in the Karl Patterson Schmidt volume guarantees long-time recognition of the deserved honor that it does him.

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## New Books

*Experimental Pharmacodynamics.* T. Koppányi and A. G. Karczmar. Burgess, Minneapolis 15, 1955. 256 pp. \$5.

*Metallurgical Progress.* vol. 2. Philosophical Library, New York; Cassier, London, 1955. 71 pp. \$6.

*Plastics and Building.* E. F. Mactaggart and H. H. Chambers. Philosophical Library, New York, 1955. 181 pp. \$12.

*Present-Day Psychology.* An original survey of departments, branches, methods, and phases, including clinical and dynamic psychology. A. A. Roback, Ed. Philosophical Library, New York, 1955. 993 pp. \$12.

*Particle Size Determination.* R. D. Cadle. Interscience, New York, 1955. 303 pp. \$5.50.

*Mutual Aid. A factor of evolution.* Petr Kropotkin; foreword by Ashley Montagu; "The struggle for existence" by Thomas H. Huxley, Extending Horizons Books, Boston 8, Mass., 1955. 362 pp. Cloth, \$3; paper, \$2.

*Biochemistry of the Developing Nervous System.* Proceedings of the First International Neurochemical Symposium, held at Magdalen College, Oxford, 13-17 July 1954. Heinrich Waelsch, Ed. Academic Press, New York, 1955. 537 pp. \$11.50.

*Histamine: Its Role in Anaphylaxis and Allergy.* M. Rocha e Silva. Thomas, Springfield, Ill.; Blackwell, Oxford, England, 1955. 248 pp. \$7.50.

*The Guilty Mind.* Psychiatry and the law of homicide. John Biggs, Jr. Harcourt, Brace, New York, 1955. 236 pp. \$4.50.

*Kinships of Animals and Man.* A textbook of animal biology. Ann H. Morgan. McGraw-Hill, New York, 1955. 839 pp. \$6.75.

*Bibliographia Araneorum.* vol. II, pt. 1. Pierre Bonnet. The Author, Université de Toulouse, 1955. 918 pp. \$23.

*Structure of the Ego.* An anatomic and physiologic interpretation of the psyche based on the psychology of Otto Rank. Lovell Langstroth. Stanford Univ. Press, Stanford, Calif.; Oxford Univ. Press, London, 1955. 149 pp. \$4.

*Smithsonian Institution, Annual Report of the Board of Regents.* Publ. 4190. U.S. Govt. Printing Office, Washington, 1955. 455 pp.

*Fishes of Japan.* Illustrations and descriptions of the fishes of Japan. Yaichiro Okada. Maruzen, Tokyo, 1955. 463 pp. \$10.

## Miscellaneous Publications

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

*Indian Agricultural Research Institute, Souvenir, Golden Jubilee, 1905-1955.* The Institute, New Delhi, 1955. 90 pp.

*South Pacific Commission, Report for the Year 1953.* The Commission, Noumea, 1954. 33 pp.

*Life Insurance Medical Research Fund, Annual Report, 1 July 1954 to 30 June 1955.* The Fund, New York 17, 1955. 92 pp.

*Mineralogy of Some Japanese Mangane Ores.* Stanford Univ. Publ., Geological Sciences, vol. 5. Donald Edward Lee. Stanford Univ. Press, Stanford, Calif.; Oxford Univ. Press, London, 1955. 64 pp. \$1.50.

*Proceedings on the Conference on Interfacial Phenomena and Nucleation.* vols. 1-3. Geophysical Research Papers No. 37. H. Reiss, Ed. Geophysics Research Directorate, Air Force Cambridge Research Center, Cambridge, Mass., 1955. vol. 1, 225 pp.; vol. 2, 190 pp.; vol. 3, 123 pp. (Order from U.S. Dept. of Commerce, Office of Technical Services, Washington 25).

*Symposium on Genetic Recombination.* Given at Research Conference for Biology and Medicine of the Atomic Energy Commission, 19-21 April 1954. Oak Ridge National Laboratory, Oak Ridge, Tenn., 1955. 321 pp.

*Tularemia in Sheep and in Sheep Industry Workers in Western United States.* Public Health Monogr. No. 28. William L. Jellison and Glen M. Kohls. U.S. Public Health Service, Washington 25, 1955. 17 pp. Single copy, free.

*Educational Aids for Schools and Colleges 1955-56.* National Assoc. of Manufacturers, New York 17, 1955. 24 pp.

*Yale Conservation Studies.* vol. 4. Yale Conservation Club, Yale Univ., New Haven, Conn., 1955. 31 pp.

*Marine Sciences Programs in the South.* Regional Committee on Marine Sciences. Southern Regional Education Bd., Atlanta, Ga., ed. 2, 1955. 125 pp.

*Measurement of Vibration.* Ervin E. Gross, Jr. General Radio Co., Cambridge 39, Mass., 1955. 60 pp.

*Results of 1954 Fungicide Tests.* American Phytopathological Soc., 1955 (Order from D. A. Roberts, College of Agriculture, Ithaca, N.Y.). 16 pp. \$1.

*Algunos Problemas Relativos al Equilibrio Químico de Una Fase Gaseosa.* Publicaciones del Instituto de Matematica y Estadística, vol. II, No. 8. Juan J. Schäffer. 28 pp. *Figura Mínima que Cubre Puntos de Una Red. II.* vol. II, No. 9. Juan J. Schäffer. 26 pp. Facultad de Ingeniería y Agrimensura, Montevideo, Uruguay, 1955.