Contributions to the Theory of Riemann Surfaces. L. Ahlfors *et al.*, Eds. Princeton Univ. Press, Princeton, N. J., 1953. 264 pp. $4.

A hundred years ago Bernhard Riemann wrote his famous and fundamental doctoral thesis *Grundlagen für eine allgemeine Theorie der Functionen einer veränderlichen complexen Grösse,* in which he created the geometric function theory and, in particular, introduced the concept of "Riemann surfaces." In order to celebrate this centennial anniversary, a Conference on Riemann Surfaces was held at Princeton, 14–15 Dec. 1951. On this occasion 21 well-known mathematicians presented papers that showed the great and inspiring influence of Riemann's ideas to the development of modern mathematics.

An introductory article by L. V. Ahlfors gives a very interesting historical review on the 100 years of the theory of conformal mapping and Riemann surfaces up to our present time. The wide range of the more special contributions of the other mathematicians is very remarkable. They discuss variational methods (M. Schiffer), topological methods (J. A. Jenkins and M. Morse), Dirichlet's principle (Z. Nehari, M. Schiffman), conformal mappings (J. A. Jenkins, A. C. Schaeffer, S. E. Warschawski), studies of Riemann surfaces under many different points of views (E. Calabi, L. Fourès, M. Heins, S. Kakutani, W. Kaplan, P. C. Rosenbloom, H. L. Royden), structure of complex spaces (S. Bochner), functions on Riemann surfaces (L. Bers, L. Sario), linear partial differential equations (S. Bergman), operators on manifolds (D. C. Spencer), and the Riemann-Roch theorem (K. Kodaira). These many diversified contributions show that the interest in these questions is at present alive and strong.

ARTHUR ROSENTHAL
Department of Mathematics, Purdue University

Notions Elémentaires de Chimie Générale. Paul Pascal, Masson, Paris, 1953. 550 pp. Illus. + plates. 3600 fr.

During 1949–52 Paul Pascal published four volumes, totaling 1800 pages and constituting "an exposition, theoretical and critical, of the principal problems of Physical Chemistry that should be known to every trained chemist."

The present volume is a selection of themes and topics from this exhaustive treatise and is a summary for the reader who cannot afford the time or does not have the mathematical training to master the definitive work. It is designed specifically for premedical and biology students. It is not so much concerned with "general" or descriptive chemistry, as we would use the terms, but rather with classical physical, including colloid, chemistry.

To compensate for his selectivity of coverage and for his abridgment of full mathematical treatment, the author has included many diagrams and models designed to aid comprehension of the text. Also, "thanks to the relative independence of the principal chapters, a reader stopped by a momentary difficulty can 'jump,' during a first reading, without risk of losing the sequence of the development." Another useful feature is a chapter on the reading of graphs.

The main chapter headings are "Evolution of ideas on the nature of matter"; "Lacunal and discontinuous structure of things"; "Structure of the material atom"; "Modification of the nuclear structure"; "Molecular and ionic structures"; "Macrostructures"; "Mechanism of grouping of atoms and ions"; "Chemical kinetics"; "Evolution and equilibrium of chemical systems"; "Graphical representation of systems"; "Particulate study of liquid solutions"; "Surface phenomena"; and "Disperse systems."

The literary style is direct, and the American reader with a moderate facility in technical French will have no difficulty. This book could profitably be read not only by students but also by mature professionals in the collateral sciences, particularly the biological. I know of no entirely comparable work in English.

BEVERLY L. CLARKE
Chemical Division, Merck & Co., Inc.
Rahway, New Jersey

Handbook of Freshwater Fishery Biology with the First Supplement. Kenneth D. Carlander. Brown, Dubuque, Iowa, 1953. v + 429 pp. $6.50 (Owners of the *Handbook,* 1950, may purchase the supplement, separately bound, for $3.)

Various branches of science not richly endowed with funds for bibliographic syntheses are sometimes blessed with a scholar of classical unselfishness. Fisheries is currently such a field, and Kenneth Carlander is such a scholar. It was my pleasure to review [*Science* **113**, 458 (1951)] this author's first source book of age, growth, and life-history data on American food, game, and other fishes. The supplement extends and brings more nearly up to date the published information on the subjects covered. Its outstanding feature is the expanded section on population data. This part composed less than 5 percent of the original work but makes up more than 10 percent of the supplement. It adds about 450 titles to the original number of some 1100 which were abstracted earlier. The summary is indicative of a tremendous investment on the part of American workers in descriptive studies of growth in length and weight. It makes one wish that proportional effort had been spent on the how and why of fish growth

Subdivision of the topic "Population data" in the table of contents for both original and supplement would have helped me and, more importantly, the user.

One cannot peruse a compilation such as Carlander's without regretting that so much additional information, of the kind reported, is not generally available for inclusion. Examples of such data are in the countless unpublished reports that lie in the files of state, federal, and private fishery agencies and in the many unprinted collegiate theses. It would seem desirable that fishery workers generally adopt an active pro-

gram of bringing such material into Carlander's hands. This would be particularly true of material for which other publication is unlikely or uncertain.

It is common knowledge in other fields that through use informational source books tend to become biblical in stature. Fishery workers will do well to guard against such an eventuality by strict avoidance of the unscientific practice of unduly substituting data from Carlander for direct use of original papers. In order to avoid perpetuation of inadvertencies, which almost necessarily are a part of any compendium, it is to be hoped that originals will continue to be used faithfully in spite of the convenience of this handbook. Let the handbook be the key to the literature, but do not let it become the oracle!

Dr. Carlander deserves the continuing praise and gratitude of his colleagues in aquatic biology and fisheries. He certainly has mine.

KARL F. LAGLER

Department of Fisheries,
School of Natural Resources, University of Michigan

New Books

Theory and Method in the Social Sciences. Arnold M. Rose. Univ. of Minnesota Press, Minneapolis, 1954. xii + 351 pp. $5.

Introduction to the Chemistry of Enzymes. Keith J. Laidler. McGraw-Hill, New York–London, 1954. ix + 208 pp. Illus. $5.

Introduction to Nuclear Engineering. Raymond L. Murray. Prentice-Hall, New York, 1954. xiii + 418 pp. Illus. $7.

So Little for the Mind. ed. 2. Hilda Neatby. Clarke, Irwin, Toronto, 1953. xiii + 384 pp. $3.

Tables of Integral Transforms. vol. I. Based, in part, on notes left by Harry Bateman. Bateman Project Staff, A. Erdelyi, Ed. McGraw-Hill, New York–London, 1954. xx + 391 pp. $7.50.

Principles of Biology. W. Gordon Whaley *et al.* Harper, New York, 1954. ix + 694 pp. Illus. $6.

Rocks and Mineral Deposits. Paul Niggli; trans. by Robert L. Parker. W. H. Freeman, San Francisco, 1954. xiii + 559 pp. Illus. $12.

Optical Instrumentation. George S. Monk and W. H. McCorkle, Eds. McGraw-Hill, New York–London, 1954 xxv + 262 pp. Illus. $3.75.

Nobel Prize Winners in Chemistry: 1901–1950. Eduard Farber. Schuman, New York, 1953. x + 219 pp. Plates. $5.

Truk: Man in Paradise. Viking Fund Publications in Anthropology, No. 20. Thomas Gladwin and Seymour B. Sarason. Wenner-Gren Fdn., New York, 1953. 651 pp. Illus. + plates. $6.50.

Progress in the Chemistry of Fats and Other Lipids. vol. 2. R. T. Holman, W. O. Lunderberg, and T. Malkin, Eds. Academic Press, New York; Pergamon Press, London, 1954. 347 pp. Illus. + plates. $9.80.

Nobel Prize Winners in Medicine and Physiology: 1901–1950. Lloyd G. Stevenson. Schuman, New York, 1953. ix + 291 pp. Plates. $6.50.

Personality Through Perception. An experimental and clinical study. H. A. Witkin *et al.* Harper, New York, 1954. xxvi + 571 pp. Illus. $7.50.

The Proteins: Chemistry, Biological Activity, and Methods. vol. II, pt. A. Hans Neurath and Kenneth Bailey, Eds. Academic Press, New York, 1954. ix + 661 pp. Illus. $14.

Sociology. ed. 4. Emory S. Bogardus. Macmillan, New York, 1954. xv + 616 pp. $5.

Ideals of Life. An introduction to ethics and the humanities. Millard Spencer Everett. Wiley, New York; Chapman & Hall, London, 1954. xiv + 736 pp. $5.

A Field Guide to the Birds of Britain and Europe. Roger Tory Peterson, Guy Mountfort, and P. A. D. Hollom. Houghton Mifflin, Boston, 1954. xxxiv + 318 pp. Illus. + plates. $5.

V-2. Walter Dornberger. Trans. by James Cleugh and Geoffrey Halliday. Viking Press, New York, 1954. xviii + 281 pp. + plates. $5.

Minnesota's Rocks and Waters. A geological story. George M. Schwartz and George A. Thiel. Univ. of Minnesota Press, Minneapolis, 1954. xviii + 366 pp. Illus. $4.

Essays on the Social History of Science. S. Lilley, Ed. Munksgaard, Copenhagen, 1953. 182 pp. Paper, 30 kr.

Time Counts. The story of the calendar. Harold Watkins. Philosophical Library, New York, 1954. vi + 274 pp. Illus. + plates. $3.75.

Methods of Research. Educational, psychological, sociological. Carter V. Good and Douglas E. Scates. Appleton-Century-Crofts, New York, 1954. xx + 920 pp. $6.

Advances in Enzymology and Related Subjects of Biochemistry, vol. XV. F. F. Nord, Ed. Interscience, New York–London, 1954. x + 547 pp. Illus. $11.

The Sophists. Mario Untersteiner. Trans. by Kathleen Freeman. Philosophical Library, New York, 1954. xvi + 368 pp. $6.

Progress in Biophysics and Biophysical Chemistry, vol. 4. J. A. V. Butler and J. T. Randall, Eds. Academic Press, New York; Pergamon Press, London, 1954. viii + 399 pp. Illus. + plates. $9.50.

Induction and Dielectric Heating. J. Wesley Cable. Reinhold, New York, 1954. vii + 576 pp. Illus. $12.50.

The Microtomist's Formulary and Guide. Peter Gray. Blakiston, New York, 1954. xiii + 794 pp. Illus. $10.50.

Applied Atomic Energy. K. Fearnside, E. W. Jones, and E. N. Shaw. Philosophical Library, New York, 1954. viii + 156 pp. Illus. + plates. $4.75.

Heat Conduction. With engineering, geological, and other applications. Leonard R. Ingersoll, Otto J. Zobel, and Alfred C. Ingersoll. Univ. of Wisconsin Press, Madison, rev. ed., 1954. xiii + 325 pp. Illus. $5.

Method and Perspective in Anthropology. Papers in honor of Wilson D. Wallis. Robert F. Spencer, Ed. Univ. of Minnesota Press, Minneapolis, 1954. xii + 323 pp. $4.50.

Plant Life in Malaya. R. E. Holttum. Longmans, Green, London–New York, 1954. viii + 254 pp. Illus. $3.

Die Entwicklung und Morphologie des Chondrokraniums von Myotis Kaup. Hans Frick. Georg Thiem, Stuttgart; Intercontinental Medical Books, New York, 1954. 102 pp. Illus. Paper, $3.45.

An Introduction to Bacterial Physiology. Evelyn L. Oginsky and Wayne W. Umbreit. Freeman, San Francisco, 1954. xi + 404 pp. Illus. Text, $6; trade, $7.25.

Human Development. John P. Zubek and P. A. Solberg. McGraw-Hill, New York–London, 1954. vii + 476 pp. Illus. $6.

Psychological Testing. Anne Anastasi. Macmillan, New York, 1954. xiii + 682 pp. Illus. $6.75.

Nuclear Theory. Robert G. Sachs. Addison-Wesley, Cambridge, Mass., 1953. xi + 383 pp. Illus. $7.50.