

The author's style is intensely descriptive. He crams about as much information into the 166 pages of text as would be possible in a readable account. As a result, this short book contains a large quantity of data that could not be obtained anywhere else save in the numerous sources the author cites in his bibliography. Even those sources would not be enough, of course, because the documentary material is supplemented by VanStone's own ethnographic data in certain key areas, and surely his experience in the region has colored his interpretation of the historical sources. The bibliography, a contribution in its own right, includes a number of early Russian titles dating from 1823, as well as several unpublished manuscripts and other archival entries.

The maps, which contain the absolute minimum of pertinent information, constitute the major weakness of this study. The first three (of four), which focus successively on Alaska, southwestern Alaska, and the Nushagak River region, are all right as they stand. However, they would have been of greater assistance to the reader had they all been placed in the introductory account of the geographical and ethnographical background of the study rather than scattered, apparently randomly, through the first 69 pages of the book. Only map 4, which pinpoints the salmon canneries in Nushagak Bay in 1908, is effective. The material presented in part 2 of the book, especially, would have been greatly enhanced by the inclusion of a number of maps of this sort, each one focusing on the specific subject under consideration. This omission is especially serious in the chapter dealing with settlement patterns; the reader is forced to back up 40 pages or more (to map 3) every time he wants to find out precisely what place the author is talking about.

As it stands, this book will probably not appeal to a very wide audience of anthropologists. It is, however, an important addition to the literature on the Eskimos and as such will be useful to specialists on northern peoples. In addition, it may also be of interest to students of more general problems of culture change and contact. Its ultimate worth, though, will depend to a significant extent on how well it relates to other studies that one expects will be forthcoming as a result of VanStone's extensive research in the Nushagak region. If future reports fulfill the promise suggested by this one, and if the various

publications are carefully integrated with one another, the series as a whole may well constitute one of the most significant contributions to our knowledge of arctic peoples ever made by a single author.

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The Liquid State

An Introduction to the Statistical Theory of Classical Simple Dense Fluids. G. H. A. COLE. Pergamon, New York, 1967. xii + 284 pp., illus. \$12.

Liquid state physics is entering a period of rapid development. Cole's monograph is one of a number of books on the theory of liquids to be published in the last few years. (Some others are by J. A. Barker, 1963; I. Z. Fisher, 1964; S. A. Rice and P. Gray, 1965; P. A. Egelstaff, 1967.) Cole has made valuable contributions to the theory of liquids, including some excellent review articles. The present book appears to be an extension and amplification of his earlier reviews.

The general approach taken here is to describe properties of liquids by means of probability distribution functions of small subsets (usually one, two, or three) of the large number of molecules in the fluid. This approach is commonly called the hierarchy method and was pioneered by Yvon and by Kirkwood. As the title of the book indicates, Cole's discussion is limited to classical fluids (not helium or Fermi liquids), to simple fluids (excluding systems where internal molecular structure plays a significant role, and including mainly the heavier rare gases), and to dense fluids (either liquids or gases at typical liquid densities). Even within these narrow limitations of approach and content a substantial literature has developed.

In the first three chapters Cole reviews some background material on the liquid state properties to be discussed and on general statistical mechanical techniques. The next three chapters are concerned mainly with the theory of the radial distribution function. Derivations are presented for all the standard approximate equations, due to Born and Green, Yvon, Kirkwood, Cole, and Fisher, and Percus and Yevick, and the hypernetted chain equations; and the numerical consequences of those equa-

tions are summarized and compared with experiment. Cole concludes this part of the book correctly with the remark "... the calculation of the thermodynamic properties of equilibrium fluids is still far from its final state."

The final three chapters deal with nonequilibrium properties. Here the main emphasis is on the Fokker-Planck method, due originally to Kirkwood. Cole discusses also Eisenschitz's version of this theory, and the closely related Rice-Allnatt theory. Numerical calculations of viscosity, thermal conductivity, and diffusion are compared with experiment, and agreement is typically no better than within a factor of two. (This may be not much better than one can get from dimensional analysis and the simplest of physical pictures.) Here again, Cole remarks correctly that "the theory of transport in liquids has not yet reached its final form. . . ."

In spite of the somewhat negative conclusions that can be drawn from the approaches described here, this book is a valuable summary of how these approaches work.

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Odyssey of an Engineer

As I Remember. The Autobiography of STEPHEN P. TIMOSHENKO. Translated from the Russian edition (Paris, 1963) by Robert Addis. Van Nostrand, Princeton, N.J., 1968. xviii + 430 pp., illus. \$9.75.

This is a very interesting book indeed. It is the story of an eminent teacher who literally lived two lives, the first in Russia before the revolution and the second in the United States after it. It is the story of a man whose father was born a serf in Russia; who after a good education rose to a position of eminence in his chosen field of engineering mechanics in Russia; who between the ages of 40 and 44, during the Russian revolution, wandered all over eastern Europe under frightful circumstances, with hardly a place to sleep; who at the age of 44 came to the United States barely able to understand English and then in the next 40 years fundamentally transformed the teaching of engineering mechanics in our universities; and who now, nearly 90, is still hale and hearty.

The book starts with a vivid description of the life of a child on a large farm or estate in the Ukraine in the 1880's, progressing to the high school in a neighboring provincial town where the boys wore uniforms and the teachers frock coats, to a highly competitive examination for entrance to the one and only Civil Engineering Railroad Institute of the Empire in Saint Petersburg and the four-year course in that institute, with a trip to France and Germany during the last summer vacation.

Western Europe, and especially Germany, around 1900, with its highly developed state of engineering mechanics, was a different world from Russia. It made an indelible impression on the young man. During the 17 years between his graduation and the revolution Timoshenko became a full professor in Kiev and Petrograd, visited western Europe repeatedly, wrote a host of important papers and books, and toward the end was the recognized leader of engineering mechanics in Russia. He also managed to be discharged from his Kiev professorship by the Czarist government for holding views that were too liberal.

When the Bolsheviks took hold in 1917 Timoshenko fled, first south to Kiev, where during the short-lived independence of the Ukraine he became one of the founders of the Ukrainian Academy of Sciences, then further south to the Crimea, to Istanbul, and to Zagreb, where he became a professor again. The story of these wanderings and of how he brought his family out of Kiev is truly hair-raising.

In 1922 he immigrated to the United States and began his second life; first for a short time with Mr. Akimoff, also a Russian refugee, in Philadelphia, then in the Westinghouse research laboratory in Pittsburgh for five years, then at the University of Michigan for nearly ten years, and finally at Stanford University. Between 1922 and 1962 he wrote a dozen books on all aspects of engineering mechanics, which now are in their third or fourth U.S. editions and which have been translated into half a dozen foreign languages each, so that his name as an author and scholar is known to nearly every mechanical and civil engineer in the entire world. During this period he also traveled to Europe almost every year, the visits becoming progressively longer until finally he retired there altogether in 1966.

The second half of the book describes

the author's life in this country with his pupils and the many foreign visitors he attracted, as well as his European trips, in great detail. He attended nearly all international and national meetings and met all persons of prominence in applied mechanics in this world; the descriptions and anecdotes of these encounters make interesting reading.

The book is not a "scientific" autobiography. General readers will find interest in Timoshenko's account of how, as a young man in Russia, he studied the books of and in many cases had close personal contact with the great creators of applied mechanics of the age: Rayleigh, Love, G. I. Taylor, Southwell, Mesnager, Föppl, Prandtl, and von Kármán; how he found original applications of the ideas and theories of those men to his own field; and how he spread the gospel through contacts with his pupils and through his printed books and papers.

Timoshenko was a brilliant teacher who brought out the fundamental aspects of his subject with great clarity and always applied them to practical situations, which made him popular with the engineers in his audience. As a linguist he was less accomplished; at the beginning of any lecture he was difficult to understand, even after many years in this country; however, after 15 minutes of his lecturing the audience forgot all about that and followed his clear exposition for its own sake in spite of grammar.

There is no question that Timoshenko did much for America. It is an equally obvious truth that America did much for Timoshenko, as it did for millions of other immigrants from all over the world. However, our autobiographer has never admitted as much to his associates and pupils, who, like myself, often have been pained by his casual statements in conversation. That pain is not diminished by reading those statements on the printed page, and one would have wished for a little less acid and a little more human kindness. However, the book was originally written in the Russian language and was intended for and published by the White Russian refugee colony in western Europe. The present translation is warmly recommended to all readers interested in applied mechanics or contemporary history.

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Books Received

Advances in Applied Microbiology. Vol. 9. Wayne W. Umbreit, Ed. Academic Press, New York, 1967. xvi + 300 pp., illus. \$14.

Advances in Biology of the Skin. Vol. 8, The Pigmentary System. Proceedings of a symposium, Portland, Ore., 1966. William Montagna and Funan Hu, Eds. Pergamon, New York, 1967. xxii + 659 pp., illus. \$27.

Advances in Free-Radical Chemistry. Vol. 2. G. H. Williams, Ed. Logos Press, London; Academic Press, New York, 1967. x + 274 pp., illus. \$14.

The Alkaloids. Chemistry and Physiology. Vol. 10. R. H. F. Manske, Ed. Academic Press, New York, 1968. xviii + 668 pp., illus. \$28.

Animal Coordinating Mechanisms. Benjamin W. McCashland. Brown, Dubuque, Iowa, 1968. x + 118 pp., illus. Paper, \$1.95.

Antarctic Map Folio Series. Folio 7, Glaciers of the Antarctic. John Mercer. American Geographical Society, New York, 1967. \$3.50.

Antarctic Map Folio Series. Folio 8, The Antarctic Atmosphere. Climatology of the Surface Environment. Plates compiled by the National Weather Records Center and W. S. Weyant. Text by W. S. Weyant. American Geographical Society, New York, 1967. 13 loose maps, in folder. \$4.50.

The Art of Computer Programming. Vol. 1, Fundamental Algorithms. Donald E. Knuth. Addison-Wesley, Reading, Mass., 1968. xxii + 634 pp., illus. \$19.50. Computer Science and Information Processing series.

As I Remember. The Autobiography of Stephen P. Timoshenko. Translated from the Russian edition (Paris, 1963) by Robert Addis. Van Nostrand, Princeton, N.J., 1968. xviii + 430 pp., illus. \$9.75.

Asymptotic Methods in the Theory of Linear Differential Equations. S. F. Feshchenko, N. I. Shkil', and L. D. Nikolenko. Translated from the Ukrainian edition (Kiev, 1966) by Scripta Technica. Herbert Eagle, Translation Ed. Elsevier, New York, 1967. xvi + 270 pp., illus. \$14. Modern Analytic and Computational Methods in Science and Mathematics, vol. 10.

Atomic Structure and Valency. For General Students of Chemistry. B. Stevens. Chapman and Hall, and Science Paperbacks, London, 1967 (distributed in the United States by Barnes and Noble, New York). viii + 103 pp., illus. Paper, \$1.75. Physical Chemistry Textbooks. Reprint of the 1962 edition.

A Bibliography of Modern History. John Roach, Ed. Cambridge University Press, New York, 1968. xxiv + 388 pp. \$5.95.

The Calculus with Analytic Geometry. Louis Leithold. Harper and Row, New York, 1967. xvi + 976 pp., illus. \$12.95.

Chemical Equilibrium. Allen J. Bard. Harper and Row, New York, 1967. xiv + 206 pp., illus. Paper \$3.75.

Chemical Fertilizers. Proceedings of the 17th international congress "Chemistry Days 1966," Milan, October 1966. Gia-

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