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The lists are formed, the trumpet sounds, and Upstead starts his exciting adventure to drive home, to Washington, D. C., the simple truth stated by the frustrated old man, his teacher: "There are secrets in technology, yes. But not in basic theory, not in fundamental science. The only scientific secrets are the ones we haven't found out yet."

Colby has written a gaudy book with brilliant colors where subtle shades are true; he uses the dark plot of a financier's bald attempt to wrest control of atomic energy from the government where unresolved and complicated tensions exist and change with time; he makes people articulate their purposes and motives where most often these feelings are hidden beneath generalities which fit accepted mores.

Mixed up with all this is a straightforward, unexaggerated effort to tell the meaning of the old man's phrase, that there is no secrecy in basic science, in simple words understandable without a course in the discipline of scientific method. The big secret is that there is no Big Secret.

Colby's own secret may be that he dressed a serious book in the accoutrements of a thriller and overdrew all his characters almost to the point of burlesque, but kept his science straight, because he wanted to reach many people, using conventional, popular forms.

Perhaps the secondary moral of this highly moral book is that in certain circumstances how a thing is said may not be so important as who understands it once it is said. It is difficult for a good idea to lose its dignity and sometimes one can reach more people with a fog horn than with a flute. The measure of Colby's success will be the numbers of people who read his book and understand his thesis. DAK

Order from Chaos

NUCLEAR FORCES, VOLUME II. By L. Rosenfield. 543 pp. Interscience Publishers, New York, 1949. \$7.50.

Nuclear physics today remains an amorphous collection of experimental material as yet uncorrelated by a single thoroughgoing theory. The theories of nuclear forces available either involve the tortured, complex reasoning characteristic of the meson field theories, or involve, in phenomenological theories, empirical constants whose number is barely exceeded by the data they are supposed to explain. Bringing order into this chaos is a difficult and arduous task. The author is to be admired, both for his courage in setting this goal for his work and his success in achieving it.

Rosenfeld is interested in extracting information on nuclear forces from nuclear data whenever it is at all possible. In the first half of the second volume he considers the binding energy of light and heavy nuclei and the associated problem of the saturation of nuclear forces. For light nuclei the discussion includes both the alpha particle and Hartree models and the Wigner-Hund theory of supermultiplets. In the heavy nuclei, attention is focussed on the Fermi gas model. This half also contains a discussion of the three particle nuclear systems. Two ap-

pendices, the first on allowed beta ray transitions and the second on electromagnetic properties of nuclei with tables of the magnetic dipole and electric quadrupole moments of nuclei, may be properly included in this section.

In covering such a vast amount of ground it is hardly possible to go into detail on all of the research in each of these fields. Rosenfeld solves this problem by summarizing results and methods describing in detail some particular contribution of importance. This sometimes unfortunately results in a sketchy discussion which can be of immediate value to the cognoscenti only. It is easy, of course, to quarrel with some of the choices made. For example, this reviewer would have preferred an expansion of the treatment of the supermultiplet theory, which is admirably treated as far as it goes, and more emphasis on Svartholin's results in the theory of tritium in place of the discussion on the application of resonating group structure to this problem. In this part of this volume, the chapter on saturation was particularly well done.

The second half of this volume starts with a very clear discussion of the consequences and difficulties of meson field theories. The following chapter is also excellent. It treats the consequences of noncentral forces on two body systems both from a phenomenological and field-theoretic point of view. This attack is continued into the heavier nuclei concluding with a discussion of helium-5 and lithium-5.

In an attempt to include the latest developments as much as is feasible, there is an addendum which summarizes pertinent material in print up through June 1948 not in the main body of the book. An excellent table of atomic nuclei collected by A. H. Wafstra, a very good index, and bibliography complete the second volume.

The book will be of great value to both the student and the research workers who will find its summaries, discussions and tables very helpful in organizing and understanding the nature and results of past research in nuclear physics.

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Books Received

ENGINEERING DEVELOPMENTS IN THE GASEOUS DIFFUSION PROCESS. By Manson Benedict and Clarke Williams. 127 pp. McGraw-Hill Book Company, Inc., New York, 1949. \$1.25.

THE EXTRAPOLATION, INTERPOLATION, AND SMOOTHING OF STATIONARY TIME SERIES. By Norbert Wiener. 163 pp. The Technology Press, Massachusetts Institute of Technology, Cambridge, Mass. and John Wiley and Sons, Inc., New York, 1949. \$4.00.

TERRESTRIAL MAGNETISM AND ELECTRICITY. Edited by J. A. Fleming. (Reprint of McGraw-Hill Book Company 1939 edition.) 794 pp. Dover Publications, New York, 1949. \$4.95.

ATOMS IN ACTION. By George Russell Harrison. (3rd Edition.) 406 pp. William Morrow and Company, New York, 1949. \$5.00.

ELASTOMERS AND PLASTOMERS, VOLUME II. Edited by R. Houwink. 515 pp. Elsevier Publishing Company, Inc., New York, 1949. \$9.00.

ADVANCED CALCULUS FOR ENGINEERS. By F. B. Hildebrand. 594 pp. Prentice-Hall, Inc., New York, 1949. \$6.00.