Metal Chemistry (1960), a valuable but brief and nonmathematical survey, is not truly comparable.

Ligand field theory depends heavily on the theory of atomic spectra, group theory, and molecular orbital theory, and approximately one-third of the book is devoted to a rather condensed development of these fundamentals. The reader's understanding of elementary quantum mechanics should be at about the level of that in the book by Pauling and Wilson or the one by Schiff, and he should have at least a smattering of group theory (including representation theory).

Crystal field theory is developed in greatest detail for the octahedral field, in the weak, strong, and intermediate field cases, but a brief parallel development is also given for the more important lower symmetries. As examples, wave functions and energy expressions are worked out in detail for d^1 and d^2 configurations. In a later chapter, spin-orbit splittings of crystal-field configurations are discussed and applied to calculation of g factors and magnetic susceptibilities. A chapter on vibronic interactions deals largely with band intensities for vibronically allowed transitions and ends with an extensive and valuable discussion of Jahn-Teller configurational instability.

Other topics, which are discussed more briefly, are the Faraday magneto-optic effect, optical rotatory dispersion, electronic structures of "sandwich" compounds such as ferrocene, and spectrochemical and nephelauxetic series and thermodynamic stabilities of complex ions. The final chapter, a systematic discussion of selected inorganic complex ions and their spectra, is especially valuable for its 435 references to the original literature. References in the remaining chapters add up to a nearly equal number.

The author's approach is intentionally utilitarian rather than elegant. His intent was to write for chemists, not for theoretical physicists. Possibly some chemists will wish for a little more formalism and elegance in some areas, especially in the application of group theory. However, the essential content is clear, and the book is reasonably easy to read.

Without doubt this book will occupy a prominent position in this field for years to come.

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Weather Technology

Cloud Physics and Cloud Seeding (156 pp.); **Radar Observes the Weather** (159 pp.). Louis J. Battan. Doubleday, Garden City, N.Y., 1962. Illus. Paper, 95¢ each.

These paperbacks are volumes in the Science Study Series created by the Physical Science Study Committee, originally organized at Massachusetts Institute of Technology and now operating under the aegis of Educational Services, Inc. (Watertown, Mass.). The committee was fortunate in obtaining the services of Louis J. Battan to write these volumes. Battan (Institute of Atmospheric Physics, University of Arizona) is one of the outstanding authorities on the subjects, and he writes in a free, informative style.

In *Cloud Physics and Cloud Seeding* his approach is fundamental and direct; Battan begins with the condensation nuclei, "the building blocks of clouds," then discusses clouds as collections of water droplets, mostly 10 to 20 microns (four to eight ten-thousandths of an inch, according to the appendix) in diameter, which can be collected and studied in detail. After illustrating how ice crystals form in various kinds of clouds, the author devotes a special chapter to them and includes pictures of their delicate tracery. Then he is ready to discuss the formation of rain, snow, and hail.

In the final 40 pages, Battan treats the scientific basis and the practical application of artificial modification of clouds. This excellent exposition of a difficult subject has statistical ramifications that are based, to a large extent, on Battan's own experience.

Battan has already published a scholarly book on weather radar, and *Radar Observes the Weather* again shows his intimate knowledge of the subject. The principles of radar and its application to the detection of rain, hail, snow, thunderstorms, tornadoes, and hurricanes are described in an exciting manner. The reader is taken easily and naturally into such intricate subjects as Rayleigh and Mie scattering, index of refraction, and iso-echo contour mapping. Finally, the use of radar by airplane pilots and some interesting special applications are treated.

I have not tested these books on their intended reading audience—high school students, amateur scientists, and "interested laymen"—so I can give only my impression of their probable effectiveness with these readers. But I believe the books will be extremely well received by the audience for whom they are intended.

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New Books

General

The Book of Health. A medical encyclopedia for everyone. Compiled and edited by Randolph Lee Clark and Russell W. Cumley. Van Nostrand, Princeton, N.J., ed. 2, 1962. 912 pp. Illus. $16.50; deluxe ed., $25.

The Cabot Voyages and Bristol Discovery under Henry VII. James A. Williamson. Cambridge Univ. Press, New York, 1962. 348 pp. Illus. $7.50.

Carnegie Institution of Washington Year Book, 1961. Carnegie Institution of Washington, Washington, D.C., 1962. 537 pp. Illus. $1.50.

The Common Market. The European community in action. J. Warren Nystrom and Peter Malof. Van Nostrand, Princeton, N.J., 1962. 134 pp. Illus. Paper, $1.45.

The Genetic Code. Isaac Asimov. New American Library, New York, 1963. 187 pp. Illus. Paper, 60¢.

William Harvey. Trailblazer of scientific medicine. Rebecca B. Marcus. Watts, New York, 1962. 137 pp. Illus. $2.95 (juvenile book).

Johannes Kepler. And planetary motion. David C. Knight. Watts, New York, 1962. 192 pp. Illus. $2.95 (juvenile book).

The New Soviet Society. Final text of the program of the Communist Party of the Soviet Union. With annotations and introduction by Herbert Ritvo. *New Leader*, New York, 1962. 251 pp. Paper, 75¢.

Puerto Rico. Ally for progress. Earl Parker Hanson, Van Nostrand, Princeton, N.J., 1962. 136 pp. Illus. Paper, $1.45.

Science Writer's Guide. John Foster, Jr. Columbia Univ. Press, New York, 1963. 271 pp. $6.

A Short History of Medicine. Charles Singer and E. Ashworth Underwood. Oxford Univ. Press, New York, ed. 2, 1962. 874 pp. Illus. $10.

State and Local Taxes for Public Education. Jesse Burkhead. Syracuse Univ. Press, Syracuse, N.Y., 1963. 123 pp. Illus. Paper, $1.75.

The Travels and Controversies of Friar Domingo Navarrete 1618–1686. vols. 1 and 2. J. S. Cummins. Cambridge Univ. Press, New York, 1962. vol. 1, 283 pp., vol. 2, 321 pp. Illus. $7.50 each.

Water Atlas of the United States. Basic facts about the nation's water resources. David W. Miller, James J. Geraghty, Robert S. Collins. Water Information Center, Port Washington, N.Y., 1962. 7 pp + 40 plates. Illus.