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structures, and together they contain 72 percent of all structures; one space group alone contains 42 percent of all structures. In the heterocyclic compounds taken alone, this same space group accounts for 54 percent of all structures, and only three other groups contain more than 3 percent.

The discussion of part I is best closed by a misquotation of parts of the preface:

Let us hope . . . that . . . the present statistical survey . . . will incite theoreticians to search for an explanation of the facts which it has brought to light.

Part II of *Crystal Data*, prepared by Donnay with the collaboration of many others, represents a major improvement on an already standard and essential tool of analytic chemistry. The powder method of identification of pure substances is used in thousands of scientific and industrial control laboratories throughout the world. With this very powerful method, one can very often achieve an identification of an unknown material, but in doing so one uses only a few of the facts that can be gleaned from a study of a single crystal. With modern single-crystal methods, it is very easy to determine the cell dimensions and the space group for an unknown material. If these data for the material have been previously recorded in a file, the unknown can be identified with much greater certainty than is possible with the powder method.

The present work is an attempt to provide such a file. Single-crystal data from an unknown material can be reduced by a standard procedure to a form that can be used to determine whether or not the substance in question has been listed. If it has been listed, the identification can be complete; if it has not been listed, the unknown is an interesting subject for an x-ray analyst.

The joint preface and the introductions to the sections disarm a reviewer who wants to be too critical. Both authors acknowledge with admirable candor their fallibility and indicate to the reader by their indexing technique the way in which this can be detected. From the point of view of accurate coverage of the published material, the two parts, separately and combined, leave much to be desired. In the future, no literature search should start without reference to this book, but unfortunately such a search cannot end here.

The authors and their collaborators are to be congratulated and commended for their contribution to the literature of crystallography despite the shortcomings of their work. Unfortunately, they cannot be expected to continue indefinitely in this tedious operation, and it is hoped that the International Union of Crystallography will be able to arrange for a collaborative effort to maintain these two important classifications.

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Books Reviewed in THE SCIENTIFIC MONTHLY

November

- The Psychology of the Criminal Act and Punishment*, Gregory Zilboorg (Harcourt, Brace). Reviewed by D. W. Louisell.
- Causality in Natural Science*, Victor F. Lenzen, (Thomas). Reviewed by A. Rapoport.
- Nobel Prize Winners in Chemistry: 1901-1950*, Eduard Farber (Schuman). Reviewed by R. Adams.
- Know Your Reader*, George R. Klare and Byron Buck (Hermitage House). Reviewed by J. W. Hedgpeth.
- A Field Guide to the Birds of Britain and Europe*, Roger Tory Peterson, Guy Mountfort, and P. A. D. Hollom (Houghton Mifflin). Reviewed by C. H. Rogers.
- The Climates of the Continents*, W. G. Kendrew (Oxford Univ. Press, ed. 4). Reviewed by H. P. Bailey.
- Personality through Perception*, H. A. Witkin, H. B. Lewis, M. Hertzman, K. Machover, P. Brethall Meissner, and S. Wapner; Gardner Murphy, Ed. (Harper). Reviewed by S. C. Erickson.
- The Natural History of Mammals*, François Bourlière (Knopf). Reviewed by F. A. Pitelka.
- Proceedings of a Conference on the Utilization of Scientific and Professional Manpower and Policy for Scientific and Professional Manpower*, National Manpower Council (Columbia Univ. Press). Reviewed by H. A. Armsby.
- Insecticides and Colonial Agricultural Development*, T. Wallace and J. T. Martin, Eds. (Butterworths). Reviewed by B. B. Pepper.

- Number: The Language of Science*, Tobias Dantzig (Macmillan, ed. 4). Reviewed by E. T. Bell.
- Basic Bacteriology*, Carl Lamanna and M. Frank Malette (Williams & Wilkins). Reviewed by P. Gerhardt.
- Religion, Philosophy and Psychical Research*, C. D. Broad (Harcourt, Brace). Reviewed by F. P. Clarke.
- Music Therapy*, E. Podolsky, Ed. (Philosophical Library). Reviewed by P. R. Farnsworth.
- Pattern of the Tiger*, Stanwell Fletcher (Little, Brown). Reviewed by D. Bidney.
- Organic Chemistry*, Robert Ward Getchell (McGraw-Hill). Reviewed by C. A. VanderWerf.
- Plant Breeding for Everyone*, John Y. Beaty (Charles T. Branford). Reviewed by G. W. Dillon.
- Practical Chromatography*, R. C. Brimley and F. C. Barrett (Reinhold; Chapman & Hall); *Chromatographic Methods of Inorganic Analysis*, F. H. Pollard, and J. F. W. McOmie (Academic Press; Butterworths). Reviewed by J. H. Yge.
- Man, Rockets and Space*, Burr W. Leyson (Dutton). Reviewed by H. S. Tsien.
- Viruses*, Cold Spring Harbor Biological Laboratory. Reviewed by G. H. Bergold.
- A History of The College of Pharmacy, Columbia University*, Charles W. Ballard (Columbia Univ. Press). Reviewed by G. L. Jenkins.
- The Hand Produced Book*, David Diringer (Philosophical Library). Reviewed by J. Holmes.
- Industrial Electronics*, R. Kretzmann (Philips Technical Library; Elsevier). Reviewed by B. R. Gossick.

New Books

- Frecks and Marvels of Insect Life.** Harold Bastin. Wyn, New York, 1954. 248 pp. Illus. + plates. \$3.75.
- Foreign Policy Analysis.** Feliks Gross. Philosophical Library, New York, 1954. xxiv + 179 pp. \$3.75.
- The Application of Results of Research.** Vera Connell, Ed.; in collaboration with the British Commonwealth Scientific Offices. Academic Press, New York; Butterworths, London, 1954. vii + 212 pp. \$5.
- Enfermedades Infecciosas y Parasitarias.** vols. 1 and 2. Jose Ink. Lopez & Etchegoyen, Buenos Aires, 1953. xxvii + 1485 pp. Illus. + plates.
- Careers and Opportunities in Science.** A survey of all fields. Philip Pollack. Dutton, New York, 1954. Revision of *Careers in Science*. 252 pp. Plates. \$3.75.
- A Treatise on Electricity and Magnetism.** vols. I and II. James Clerk Maxwell. Dover, New York, 1954. An unabridged reprint of the last rev. ed. 3 (1891). vol. I, xxxii + 506 pp.; vol. II, xxiv + 500 pp. Illus. + plates. \$4.95.
- The Technology of Solvents and Plasticizers.** Arthur K. Doolittle. Wiley, New York; Chapman & Hall, London, 1954. xv + 1056 pp. Illus. \$18.50.
- The Study of the Brain.** A companion text to the stereoscopic atlas of neuroanatomy. Hyman S. Rubinstein. Grune and Stratton, New York, 1953. xiii + 209 pp. Illus. + plates. \$9.50.
- Streams, Lakes, Ponds.** Robert E. Coker. Univ. of North Carolina Press, Chapel Hill, 1954. xviii + 327 pp. Illus. + plates. \$6.
- The Story of Man.** From the first human to primitive culture and beyond. Carleton S. Coon. Knopf, New York, 1954. xxii + 437 pp. Illus. + plates. \$6.75.
- Packaging Engineering.** Louis C. Barail. Reinhold, New York, 1954. vii + 407 pp. Illus. \$9.50.
- Oral Pathology.** A histological, roentgenological, and clinical study of the diseases of the teeth, jaws, and mouth. Kurt H. Thoma. Mosby, St. Louis, ed. 4, 1954. xviii + 1536 pp. Illus. + plates. \$22.50.
- The Microphysical World.** William Wilson. Philosophical Library, New York, 1954. vii + 216 pp. Illus. \$3.75.
- General Education: Explorations in Evaluation.** The final report of the cooperative study of evaluation in general education of the American Council on Education. Paul L. Dressel, director. American Council on Education, Washington, D.C., 1954. xxiii + 302 pp. \$3.50.
- A Guide to the Planets.** Patrick Moore. Norton, New York, 1954. 254 pp. Illus. + plates. \$4.95.
- Fisher/Tag Manual for Inspectors of Petroleum.** Fisher Scientific, Chicago, ed. 28, 1954. 218 pp.
- Connective Tissue in Health and Disease.** G. Asboe-Hansen, Ed. Munksgaard, Copenhagen, 1954. 321 pp. \$7.50.
- Colorimetric Methods of Analysis.** Including some turbidimetric and nephelometric methods. vol. IV. Foster Dee Snell and Cornelia T. Snell. Van Nostrand, New York-Toronto and Macmillan, London, ed. 3, 1954. 676 pp. \$12.50.
- Chemistry of Lichen Substances.** Yasuhiko Asahina and Shoji Shibata. Japan Society for the Promotion of Science, Tokyo, 1954 (Order from Maruzen Co., Nihonbashi, Tokyo). 240 pp. \$2.50.
- Basic General Chemistry in Outline Form.** Edward Lauth Haensch and George Norman Quam. Burgess, Minneapolis, ed. 5, 1953. 285 pp. Paper, \$4.

Miscellaneous Publications

- Encouraging Future Scientists: Materials and Services Available in 1954-55.** John H. Woodburn, Ed. 21 pp. 50¢. **Student Projects.** 24 pp. 50¢. Future Scientists of America Foundation, Natl. Science Teachers Assoc., Washington 6, 1954.
- Secondary Component in the Spectrum of Capella.** Contrib. No. 36. K. O. Wright. Dominion Astrophysical Observatory, Victoria, B.C., 1954. 12 pp. Illus.
- Fish Spermatogenesis with Particular Reference to the Fate of the Cytoplasmic Inclusions.** pt. II, *Spermatogenesis of Elasmobranchs (Pleuronemata)*. Res. Bull., Zoology, No. 46. Hem Sagar Vasisht. Panjab Univ., Hoshiarpur, India, 1954. 10 pp. + plates. R. 2-14-0.
- Development of Modern Sociology.** Its nature and growth in the United States. SSS 6. Roscoe C. Hinkle, Jr., and Gisela J. Hinkle. 75 pp. 95¢. **Sexual Nature of Man and Its Management.** DPP 6. Clarence Leuba. 40 pp. Illus. 85¢. Doubleday, Garden City, N.Y., 1954.
- Birds of Yosemite National Park.** Yosemite Nature Notes, vol. 33, No. 8. Cyril A. Stebbins and Robert C. Stebbins. Yosemite Natural History Assoc., Yosemite Natl. Park, Calif., 1954. 80 pp. Illus.
- Statistics of Navy Medicine.** Fiscal year 1954. vol. 10, No. 10. Bur. of Medicine and Surgery, Dept. of the Navy, Washington 25, 1954. 56 pp. Illus.
- Food Products and Processes.** Government-owned inventions available for license. Patent Abstract Ser., No. 3. PB 111466. U.S. Dept. of Commerce and Small Business Administration, Washington 25, 1954 (Order from Office of Tech. Services, U.S. Dept. of Commerce, Washington 25). 21 pp. \$1.
- Check List of North American Water-Mites.** Fieldiana: Zoology, vol. 35, No. 3. Rodger D. Mitchell. Chicago Natural History Museum, Chicago, 1954. 42 pp. 75¢.
- Nucleation and Growth of Graphite in Steel.** Reprint Bull. No. 43. Floyd Brown. Dept. of Engineering Research, North Carolina State College, Raleigh, 1954. 5 pp. Illus.
- Biology of Anopheles Gambiae.** Research in French West Africa. Monogr. Ser., No. 9. M. H. Holstein. World Health Organization, Geneva, 1954 (Order from Columbia Univ. Press, New York 27). 172 pp. Illus. \$2.
- Report of the University Museums, 1952-1953.** Univ. of Michigan, Ann Arbor. 29 pp.
- The Johns Hopkins University Report of the Treasurer for the Fiscal Year Ended June 30, 1954.** The University, Baltimore, 1954. 14 pp. Illus.
- Bibliography of Atomic Power and Related Atomic Energy Topics for the Non-Specialist.** Atomic Energy of Canada, Chalk River, Ontario, 1954. 87 pp.
- Mitosis and Meiosis in Luzula campestris DC.** Botany, vol. 27, No. 4. Spencer W. Brown. 28 pp. Illus. + plates. 75¢. **Free Enterprise and University Research.** 154 pp. Illus. Univ. of California, Berkeley, 1954.
- Health, Medical and Drug Factors in Highway Safety.** Proc. of Second Highway Safety Research Correlation Conference, 5-6 Apr. 1954. 228 pp. **Eighth Annual Report of the Committee on Growth to the American Cancer Society.** July 1952-June 1953. 300 pp. Gratis. Natl. Acad. of Sciences-Natl. Research Council, Washington 25, 1954.
- Scientific and Technical Serial Publications, Soviet Union, 1945-1953.** Sci. Div., Library of Congress, Washington, 1954 (Order from Supt. of Documents, GPO, Washington 25). 118 pp. 60¢.