storehouse of learning. Part 3, the Subject Index, is the guide to the particular shelves on which the wished-for data may be found. Here are segregated in alphabetical, chronological order the references to any particular bird, organ, or subject in which the researcher is interested.

But such an extensive warehouse must have a chart or guidebook to help the seeker. This, the Subject Index covering 522 pages, is the most extensive and elaborate known to the writer. The major headings have subdivisions, the latter have their subdivisions, and so on. Evidently Dr. Strong has not depended on the titles for indexing, but has looked up the articles themselves. This prolonged search will explain the multiple or cross references to many articles and books. The use of bold-faced type for the year of publication of an entry (with or without an asterisk) indicates an outstanding article, generally with extensive citation of literature.

One has to work over the Subject Index, however, to realize its thoroughness and its complexity. So great are these things that an alphabetical Finding Index is a necessary key for unlocking the door to the great wealth of the vast and complicated Subject Index. Such an index, now in preparation, is to be published as Part 4. When this has been accomplished and the treasures of this great work made easily available, it will be seen that this is surely *the* Bibliography of Birds, the most valuable tool ever forged for students of ornithology and an imperishable monument to the labors of the author.

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Organic analytical reagents (Vol. I.) Frank J. Welcher. New York: D. Van Nostrand, 1947. Pp. xv + 442. $8.00.

The use of organic substances as reagents in inorganic analysis dates back to the early days of chemistry; indeed, almost 2,000 years ago Pliny tested for iron with papyrus soaked in a solution of nutgalls. This test for iron is still used in vinegar works, although filter paper, cotton, etc. replace the papyrus. It was not, however, until 1905, when Tschugaeff introduced dimethylglyoxime as a specific and highly sensitive reagent for nickel, that the significance of organic analytical reagents was strikingly brought to the attention of chemists. Since 1905, especially during the past two decades, many new organic reagents have been discovered and improved techniques have been developed. In addition to serving as specific or selective reagents in gravimetric and colorimetric analysis, organic compounds have many other uses in analytical procedures, serving as solvents, dry extractants, concentrating liquids, wash liquids, buffers, oxidizing and reducing agents, protective colloids, flocculating agents, stabilizers for certain reagent solutions, coupling agents, primary standards, pH indicators, etc.

Organic analytical reagents is to be published in four volumes, making available in one place a description of all organic compounds employed in making analyses as well as laboratory directions for their use. Volume I includes Chapters on: "The Electronic Theory of Valence" (5 pp.), "Coordination Compounds" (11 pp.), "Chelate Compounds" (9 pp.), "Types of Chelate Rings" (17 pp.), "The Effect of Structure on Solubility" (7 pp.), "Hydrocarbons" (13 pp.), "Substitution Products of Hydrocarbons" (7 pp.), "Alcohols" (50 pp.), "Phenols" (71 pp.), "Miscellaneous Phenolic Compounds" (36 pp.), "Amino Phenols" (16 pp.), "Phenol Sulfonic Acids" (20 pp.), "8-Hydroxyquinoline and Its Derivatives" (81 pp.), "Azo Derivatives of 8-Hydroxyquinoline" (13 pp.), "Ethers" (15 pp.), "Aldehydes" (19 pp.), and "Ketones" (35 pp.). The book concludes with an index of names and synonyms of organic reagents and one on their uses, arranged alphabetically under the element or radical for which they are employed.

The volume is conveniently arranged for ready reference. The formula, molecular weight, Beilstein reference, properties, and method of preparation are given for each reagent, as well as references to the original literature.

In the first printing of a work of this nature and scope it is difficult to avoid errors. The following are representative of those noted. In Table 5 (p. 22) the bond angles for 8-membered rings should be $-25° 32'$ and $-21° 35'$ for zero and one double bond, respectively, and $-9° 44'$ for four double bonds; for 9-membered rings with four double bonds the value is $-16° 29'$. On page 21. third paragraph, three of the bond angles for 7-membered rings are incorrect; the correct values are given in Table 5. On page 249, the molecular weight of $(HO_3S)_2$-$C_6H_2(OH)_2$ is given as 358.2; the correct value is 270.23. Actually, the monohydrate of the disodium salt of this acid is employed, and its molecular weight is 332.2. The sensitivity of this reagent for titanium (p. 251, line 5) should read: "1 part of titanium in 100,000,000 parts of solution . . . ."

The great number and variety of organic compounds offers one of the most promising sources for new and better analytical reagents. Volume I of this series is a valuable addition to the reference works in this interesting field of analytical chemistry and, together with the three succeeding volumes, will make a most useful treatise on organic analytical reagents.

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Scientific Book Register

COLIN, EDWARD C. *Elements of genetics.* (2nd ed.) Philadelphia-Toronto: Blakiston, 1947. Pp. xiii + 402. (Illustrated.) $3.50.

EIDINOFF, MAXWELL LEIGH, and RUCHLIS, HYMAN. *Atomics for the millions.* New York-London: McGraw-Hill, 1947. Pp. xiv + 281. (Illustrated.) $3.50.

MARKLEY, KLARE S. *Fatty acids: their chemistry and physical properties.* New York: Interscience, 1947. Pp. x + 668. (Illustrated.) $10.00.

MICHENER, WILLIAM H. *Physics for students of science and engineering.* New York: John Wiley; London: Chapman & Hall, 1947. Pp. x + 646. (Illustrated.) $4.25.

RIDENOUR, LOUIS N. (Ed.) *Radar system engineering.* New York-London: McGraw-Hill, 1947. Pp. xviii + 748. (Illustrated.) $7.50.