Book Reviews

Ullmann's Encyclopedia of Industrial Chemistry, Fifth Completely Revised Edition. Volume A17: Napthalene to Nuclear Technology (1991, 813 pp., 384 figures, 15 tables); Volume A18: Nucleic Acids to Parasympatholytics (1991, 693 pp., 216 figures, 15 tables); Volume A19: Parkinsonism Treatment to Photoelectricity (1991, 608 pp., 187 figures, 15 tables). All three volumes VCH. Weinhem. Price: £219.00.

These three further volumes of the new Ullmann are everything one would expect of this world-famous encyclopedia, and more besides. All of the volumes contain comprehensive accounts of key industrial chemicals and industrial processes, but they also cover all of the classes of agricultural and pharmaceutical products. They thus provide *the point of entry* for anyone seeking to acquire essential information about any of these areas. The diagrams are excellent, the chemical structures small but clear, and the whole encyclopedia is clearly an essential purchase for any institution where chemistry (let alone industrial chemistry) is undertaken. Highlights from the three volumes are listed below.

A17: This volume commences with a comprehensive account of naphthalene chemistry (49 pp.) followed by an exhaustive review on natural gas, including not only all of the industrial processes but also geographical aspects. The pharmaceutical industry is then represented by the inclusion of a review on nematocides, and an introduction to neuropharmacology. This article provides an entree to the 25 specialist articles that occur in other volumes of Ullmann. A lengthy section on nickel (95 pp.) covers every conceivable aspect from smelting to ecotoxicity, and this is followed by reviews on nitric acid and its congeners (75 pp.), aliphatic and aromatic nitro compounds (primarily those of industrial importance), nitrogen and nitrogen fixation. Three very specialised areas are then discussed: noble gases, non-linear optics, and non-woven fabrics, and this provides an excellent example of the sheer diversity of the coverage. The volume concludes with a mammoth review (215 pp. and 18 coauthors) of nuclear technology with a complete survey of reactor types and methods of reprocessing and waste management.

A18: The volume commences with a useful account of nucleosides, nucleotides, and nucleic acids. This area has been one of intense activity during the past ten years, especially concerning the methods for the production of polynucleotides, and the review only summarises these developments. There is, however, a completely separate entry for genetic engineering, which is the other area of intense activity. Lengthy reviews on octane enhancers, oil, and optical materials, are interspersed with concise but excellent accounts of ophthalmological preparations and optically active compounds. The latter review will (I fear) be much copied and given to undergraduates! The same is probably true of the review on organometallic compounds and homogeneous catalysis—another key growth area for research. Two major reviews on oxygen and oxidation are followed by two giant reviews on paints and coatings (185 pp., 44 coauthors), and paper and pulp (145 pp., 14 coauthors). There is no doubt that these will be the key reviews of these areas for many years to come.

A19: With an ever aging population, the first review in this volume, on the treatment of Parkinson's disease, is both timely and useful. A review on peat is followed by a lengthy account (85 pp.) on peptide and protein hormones. This is another area where there has been an explosive growth in research in recent years, and the 25 pages of references that accompany this review provide cogent testimony to this fact. Somewhat surprising is the mere 6 pages devoted to perfumes, since this is a major area of industrial chemistry, and represents (in my opinion) a serious under-estimate of the importance of the area. There are useful reviews of inorganic and organic peroxy compounds, a general survey of pharmaceuticals which serves to direct the reader to other entries in Ullmann, and the anticipated lengthy review on phenol (70 pp.). Tucked in amongst these major reviews, is a short account of phase transfer catalysts, and this too will be much copied for undergraduate/postgraduate teaching purposes. Two short reports on phenothiazines and phosgene precede comprehensive accounts of phosphorus in all its various forms including the phosphate fertilizers. The volume concludes with a very useful introduction to photochemistry complete with diagrams of photochemical reactors, and a short account of photoelectricity.

John Mann

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