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BOOK NOTES

All That Glitters. Readings in Historical Metallurgy, Michael L. Wayman (Editor), The Metallurgical Society of the Canadian Institute of Mining and Metallurgy, Montreal, 1989. x + 197 pp. Cloth (Typeset). \$40.00 for members of the Institute, \$50.00 for nonmembers.

This book is a collection of 43 articles published on the occasion of the tenth anniversary of the founding of the Historical Metallurgy Committee within the Metallurgical Society of the Canadian Institute of Mining and Metallurgy in Montreal. To promote historical studies, the Committee sponsored a regular monthly feature, entitled "Historical Metallurgy Notes", in the *Bulletin* of the Institute. These "Notes" received wide acclaim and were read by many people with great interest.

The articles in this volume cover the entire spectrum of metallurgy from ancient times to the present. The book is divided into two nearly equal sections: general articles, collected under the heading "The Development of Metallurgy" (17 articles), and specific Canadian articles, under the heading "Canadian Metallurgical History" (26 articles). Among the general articles one finds topics such as: native copper; Roman lead plumbing; old iron nails; metallurgy in prehistoric Japan; the origins of zinc and brass; the Catalan furnace; cast iron in Medieval Europe; smelting in Swansea; the iron works of Richmond, Virginia; manganese in the 19th century; the Bayer Process for alumina production; and the cyanidation process. Topics in Canadian metallurgical history include: the Forges du Saint-Maurice, Québec (the first iron-making operation in Canada) and other Canadian iron-making works; metallurgical operations at Deloro, Ontario (arsenic, cobalt, and silver); the history of gold, copper, nickel, lead, zinc, and aluminum production; and finally, the history of the Sherritt ammonia pressure leaching process - a milestone in Canadian metallurgical history.

The book is generally well produced, with numerous photographs and high quality paper. However, it is missing an index. The price is very reasonable because the Institute subsidized the project. In a way, this book is a first as, to the best of my knowledge, no other such collection of historical articles on metallurgy exists. It is comparable to the volume, *Readings in the History of Chemistry*, published some years ago by the *Journal of Chemical Education*.

The book should appeal not only to metallurgists, but to chemists, chemical engineers and, of course, historians. The editor and the Institute are to be congratulated for this magnificent effort, and I look forward to the publication of a second volume, probably some time in 1999. - *Fathi Habashi, Department of Mining and Metallurgy, Laval University, Québec City, Canada G1K 7P4*

Petrochemicals: The Rise of an Industry, Peter H. Spitz, John Wiley & Sons, New York, 1988. Cloth (Typeset). xxvi + 588 pp. \$29.95.

Even though the rapid growth of the petrochemical industry is a major part of the history of 20th century technology, previously there has not been a systematic history of this development. Peter Spitz has done an excellent job of rectifying this oversight. His description of this complex process not only clarifies what happened and why it happened, but also includes many illustrative examples describing selected companies, new production methods, products, and personal experiences that combine to produce a fascinating narrative.

At the beginning of the century, chemical manufacture of synthetic organic products used either coal or agricultural products, like molasses, as starting materials, and German companies were the leaders. By the 1920s some American companies recognized that the extensive petroleum and natural gas deposits in this country provided a cheap and convenient feedstock, but most foreign chemical companies didn't convert to petroleum-based operations until after World War II. Oil and gas were less readily available overseas, and cartels or agreements to limit production discouraged international competition.

Following World War II, U.S. petrochemical companies almost totally dominated the field. The war had destroyed many of the chemical plants in the rest of the world and swept away agreements that limited production. In the U.S. wartime efforts had made essential technical information widely available and greatly expanded plant capacity. Soon the market was crowded with American companies competing to produce chemicals that had formerly been controlled by a few corporations.

Competition further escalated in the 1970s as both U.S. and foreign companies greatly expanded production. Although disruptions of the oil supply in 1973 and 1978 raised profits briefly, the ultimate result was even greater rivalry and decreased profits. Finally, many companies were forced to decrease or eliminate their petrochemical operations. The worst of this retrenchment may now be over, but the outlook for renewed growth is unclear. After reviewing the current situation, the author argues that a solid basis now exists for further development and the future looks promising for petrochemicals.

Mr. Spitz has skillfully combined his own considerable

professional experience with extensive research and personal communications from industrial leaders to create an informative and enjoyable history. His book should be interesting both to historians of science as well as chemists who wish to better understand the development of the chemical industry. - *Harry E. Pence, Chemistry Department, SUNY-Oneonta, Oneonta, NY 13820*

Motion Toward Perfection: The Achievement of Joseph Priestley, A. Truman Schwartz and John G. McEvoy (Editors), Skinner House Books, Boston, MA, 1990. xxvi + 277 pp. Paper (Typeset). \$15.95.

This collection of ten papers and an introductory essay is based largely on a 1983 symposium celebrating the 250th anniversary of Priestley's birth. Though five of the essays have been previously published, most of them in the unlikely volume, *Oxygen and the Conversion of Future Feedstocks*, it is nice to have them accessible in a single location and in a uniform format. Priestley had many interests: scientific, theological, philosophical and political, and the papers in this volume attempt to present a balanced picture of this multifaceted man.

The introductory essay by the editors provides a brief biographical overview of Priestley. A discussion of the basis of his attitudes towards the work of Lavoisier and the French chemists is given in the essay by John McEvoy (Joseph Priestley and the Chemical Revolution); an overview of his non-chemical activities by Robert Schofield (The Professional Work of an Amateur Chemist); his theological views by John Brooke ("A Sower Went Forth": Joseph Priestley and the Ministry of Reform) and George Williams (Joseph Priestley: The Minister, Citizen and Church Historian); his political activities by Issac Kramnick (Eighteenth Century Science and Radical Social Theory: The Case of Joseph Priestley's Scientific Liberalism) and Martin Fitzpatrick (Priestley Caricaturized); his philosophical interests by A. Truman Schwartz (Priestley's Materialism: The Consistent Connection); his activities in America by Derek Davenport (Joseph Priestley in America: 1794-1804) and Donald D'Elia (Joseph Priestley and his American Contemporaries) and his family life by H. John McLachlan (Mary Priestley: A Woman of Character).

It must be confessed that this brief characterization of each essay is slightly misleading as each of them clearly shows how all of Priestley's activities were logically interrelated by his world view and how artificial it is to separate out just his chemical work. Curiously, about the only item missing from this volume is a good treatment of his laboratory discoveries in pneumatic chemistry, perhaps because it was assumed that this topic has already been worked to death in standard histories of chemistry.

The physical appearance of the volume is generally attractive, though the reproduction of the caricatures in Fitzpatrick's essay is rather poor, with many of them appearing to be slightly

out of focus. Overall, however, this is an excellent introduction to Priestley and is highly recommended to chemists and historians alike (not to mention philosophers, theologians, political scientists and connoisseurs of 18th century political caricatures).

Chemistry As Viewed From Bascom Hill. A History of the Chemistry Department at the University of Wisconsin in Madison, Aaron J. Ihde, Department of Chemistry, University of Wisconsin, Madison, WI, 1990. xvi + 688 pp. Cloth (Typeset). \$25.00.

For many decades one of the unique features of the Department of Chemistry of the University of Wisconsin - Madison has been the presence of an internationally known historian of chemistry on its faculty. Among the many benefits of this unusual arrangement is the volume under review, which is, without a doubt, one of the most thorough and well written departmental histories ever produced. In the course of nearly 700 pages, Aaron Ihde documents not only the origin and rise of an important Midwestern chemistry department, but much of the history of an important Midwestern university as well. For one of the more apparent lessons of this book is how strongly the fortunes of the chemistry department, whether they concern the acquisition of new facilities or the hiring and firing of faculty, were tied to the administrative policies of the university as a whole and how these, in turn, were tied to the policies of the state legislature.

Not only does Ihde place the chemistry department within this larger political context, he also attempts to place it within the context of the overall development of science teaching and research at Wisconsin and, in so doing, provides valuable information on the history of biology, geology, physics, agriculture and engineering at the university. Finally, and most importantly, Ihde also deals with the research of key figures within the department, a feature which is missing, to the best of my knowledge, from all previously published departmental histories - a somewhat ironic fact, since most chemistry departments would probably insist that research, to paraphrase a once popular advertising slogan, was their most important product. And, of course, it goes without saying that Ihde's expertise as an historian of chemistry allows him to place this research within the larger context of the development of chemistry as a whole.

In spite of these larger themes, Ihde has also managed to fulfill successfully the most important, though more mundane, obligation of a departmental historian - namely, to chronicle accurately and thoroughly the succession of faculty, buildings and students that compose the outer manifestations of every department's history. Ihde takes his detailed history of the department only up to 1952, probably, in part, because it becomes increasingly difficult beyond this date to accurately assess the course of events and the careers of faculty, most of

whom are still active, and, in part, because both the cast of participants and number of events become almost overwhelming. Nevertheless, a 39-page epilogue and several appendices bring at least the chronological data up to 1987.

There is no doubt that this book is a labor of love on the part of the author. Unfortunately, professional historians have become less and less willing to deal with regional themes of this type and may even feel that the book is too much about too little. Likewise, departmental alumni may feel overwhelmed by its size, since their usual idea of a departmental history is a quick read of the coffee table variety which is long on photographs and anecdotal nostalgia and short on historical detail and insight. If so, I feel that both groups are mistaken and that the true value of this wonderful gift that Ihde has given to his department will become more and more apparent with the passage of time.

The book itself is attractively typeset and is well illustrated with photographs. Copies can be ordered by writing directly to the Department of Chemistry, University of Wisconsin, Madison, WI 53708. - *William B. Jensen, University of Cincinnati, Cincinnati, OH 45221*

EVENTS OF INTEREST

* ACS Books has begun publication of its new series *Profiles, Pathways and Dreams*. Edited by Jeffrey L. Seeman, the series will consist of 22 autobiographical volumes by famous contemporary organic chemists, most of them lavishly illustrated with photographs. A review of the first three accounts, by John D. Roberts, Ernest L. Eliel and Donald J. Cram, will appear in the next issue (No. 8, Winter 1990) of the *Bulletin*.

* The Bruccoli Clark Layman Publishing Company is planning to publish two volumes on the history of the American chemical industry as part of their larger series, *The Encyclopedia of American Business History and Biography*. The volumes on the chemical industry will be edited by John K. Smith of Lehigh University who is currently looking for contributors to help write short biographies for about 250 industrial chemists, entrepreneurs and executives, short histories of about 100 chemical and pharmaceutical companies, and about 35 general entries related to the chemical industry and government legislation. Interested parties should contact Dr. John Smith, Department of History, Lehigh University, Bethlehem, PA 18015 or telephone him at (215) 758-3360.

* Volume 51 of *Kagakushi Kenkyu* (Studies of the History of Chemistry), the official organ of the Japanese Society for the History of Chemistry, was published this summer. Founded in 1973, the society has a membership of about 450 historians, chemists, chemical engineers and high school chemistry teachers. In addition to its annual meeting, the society occasionally sponsors special symposia, often in conjunction with the annual meetings of the Japanese Chemical Society.

The society's journal carries the same phonetic title as the journal of the Japanese History of Science Society as the Japanese words for science and chemistry are phonetically the same, though represented by different written characters. To avoid confusion, the History of Chemistry Society often uses the abbreviated title of *Kagakushi* when referring to its journal. The journal's current editor is Dr. Hajime Kasiwaga, who is also the current president of the society. The journal is published quarterly and carries articles, notes, book reviews, notices of recent publications, and news of interest. The articles carry English summaries. The current annual subscription rate, including handling and shipping, is \$90.00. Orders should be sent to the Export Department, Maruzen Co. Ltd., P.O. Box 5050, Tokyo International 100-31, Japan (Telex, J-26517).

* Travel grants are available from the Beckman Center for the History of Chemistry to enable interested individuals to visit Philadelphia to make use of the Othmer Library, the Edgar Fahs Smith Collection, and other associated facilities. The grants, which may be used for travel, subsistence, and copying costs, will not normally exceed \$500. Applications should include a vita, a one-paragraph statement on the research proposed, a budget, and the addresses and telephone numbers of two references. Deadlines are 1 February for grants covering the period April-June; 1 August for the period October-November, and 1 November for the period January-March. Send applications to Dr. Mary Ellen Bowden, Assistant Director of Programs, Beckman Center for the History of Chemistry, 3401 Walnut Street, Philadelphia, PA 19104-6228, (215) 898-4896.

* The Oesper Collection in the History of Chemistry of the University of Cincinnati is looking for donations of old chemistry texts, photographs, prints and chemical apparatus to add to its collections. Interested parties should contact Dr. William B. Jensen, The Oesper Collection in the History of Chemistry, Department of Chemistry, ML 172, University of Cincinnati, Cincinnati, OH 45221.

FUTURE MEETINGS

Atlanta 14-19 April 1991

Five copies of 150-word abstract (original on ACS Abstract Form) by 1 January 1991. Title of paper by 1 November 1990.

* *General Papers*. Contact J. L. Sturchio, Corporate Archives, Merck & Co., Inc., P.O. Box 2000, Rahway, NJ 07065-0900, (201) 594-3981.

* *Michael Faraday - Chemist and Popular Lecturer* (Co-sponsored by CHED). Contact Derek Davenport, Department of Chemistry, Purdue University, West Lafayette, IN 47907, (317) 494-5465.