

## COMMUNICATING THE HISTORY OF CHEMISTRY\*

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### Introduction:

It is fitting that we examine the beginnings of the recording of history of chemistry, in view of our observing the 85<sup>th</sup> birthday of the founding of HIST, first conceived by its two founders, Edgar Fahs Smith and Charles Albert Browne, at an American Chemical Society meeting at Northwestern University in 1920. The motivation for this move was later stated by Smith in one of his published books (1):

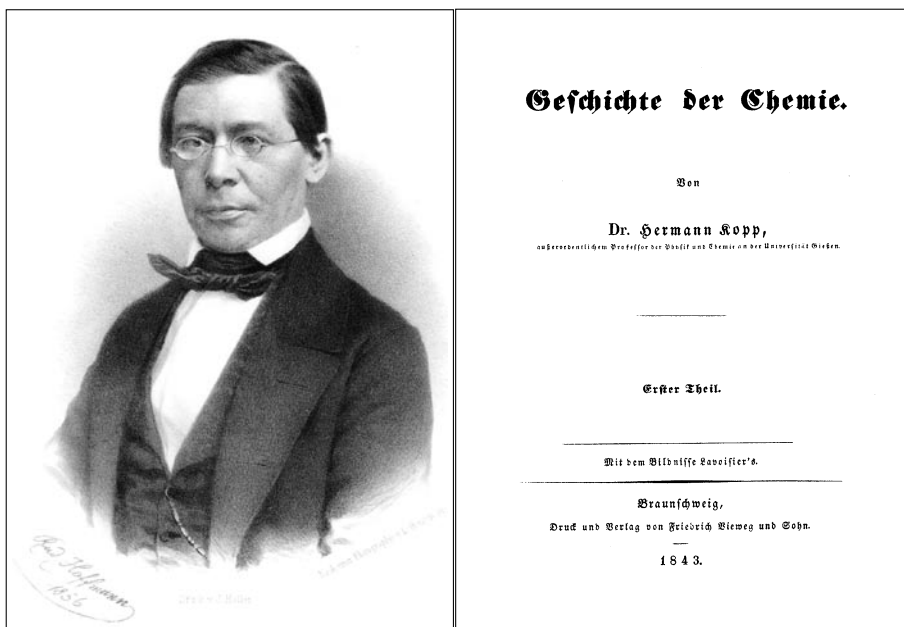
The author's hope is that sometime—how soon he knows not—but, sometime—the history of chemistry will be given its place in the curriculum of studies in every institution of learning where the science itself is studied; for it is, indeed, a very comprehensive subject.

### Books

Yet the challenge of communicating

chemical history begins in conveying the subject in the written word for the benefit of other historians of chemistry and, eventually, for their students. This essay will be focused on communication between scholars of the history of chemistry. The need, already recognized early in the 19<sup>th</sup> century, resulted in the publication of a two-volume set of books on the history of chemistry in England by T. Thomson in 1830-1831 (2). Hermann Kopp became recognized as the authority in history of chemistry, with his publication of four classic sets of books over a period of forty-three years, beginning in 1843 (3). His first, four-volume, extensive survey was succeeded by

two volumes on “contributions” to the history of chemistry some 20 years later. At the same time he was assembling a two-volume set covering the development of chemistry in modern times. Only in the 1880s did Kopp turn to a detailed coverage of the earliest period of alchemy.



A young Hermann Kopp and his first history, courtesy the Oesper Collection

**Table 1. Chronological Appearance of Periodicals in History/Philosophy of Science or Chemistry \***

1823	<i>Annals Lyceum Nat. Hist. NY</i>
1846	<i>Daedalus (J. Am. Acad. Arts Sci.)</i>
1853	<i>The Annals of Science (AAAS)</i>
1877	<i>Chemiker-Zeitung</i>
1877	<i>Annals NY Acad. Sci. (succeeds Ann. Lyceum)</i>
1877	<i>Revue des questions scientifiques</i>
1888	<u><i>Angewandte Chemie</i></u>
1912	<i>Isis</i>
1924	<u><i>J. Chem. Educ.</i></u>
1936	<i>Annals of Science (London) [English, German, French] Osiris</i>
1937	<u><i>Ambix</i></u>
1947	<i>Revue d'histoire des sciences</i>
1948	<i>Chymia</i>
1969	<i>Hist. Stud. Phys. Sci.</i>
1986	<i>Hist. Stud. Phys. Biol. Sci.</i>
1960	<i>NTM: Schriftenreihe für Geschichte der Naturwissenschaften, Technik, und Medizin [German, English, French]</i>
1962	<i>Brit. J. Hist. Sci.</i>
1962	<i>Hist. Sci., Cambridge</i>
1962	<u><i>Angew. Chem. Int. Ed. Engl.</i></u>
1967	<i>Chemie in unserer Zeit</i> , Weinheim, Wiley, online
1970	<i>Studies Hist. Philos. Sci.</i> <u><i>Kagakushi, J. Jpn. Soc. Hist. Chem. [Japanese]</i></u>
1977	<i>Kultur und Technik [German]</i>
1980	<i>Historia Scientiarum, Japan [English]</i>
1982	<i>CHOC News (-1987); News, Beckman Ctr. (1988-1992)</i>
1986	<i>Nuncius, Ist. Museo di Storia della Scienza [Italian]</i>
1988	<i>Bulletin for the History of Chemistry</i>
1992	<u><i>Chem. Heritage</i></u>
1995	<u><i>Chem. Intelligencer</i></u> (terminated 2000)
1997	<i>HYLE, (Int. J. Philos. Sci.), online</i>
1999	<i>Foundations of Chemistry</i>

\* Underlined titles cover exclusively chemistry and history; others cover sciences and may include philosophy.

A book by HIST cofounder E. F. Smith, *Chemistry in America*, was one of the earliest written on chemical history in the 20<sup>th</sup> century in the US (4). It might more appropriately have been titled "Early Chemistry in Philadelphia: the Chemical Society of Philadelphia," for he compiled minutes and reports from that society, including only a few "other chemists." In Smith's *Old Chemistries*, a set of biographical sketches and photo-

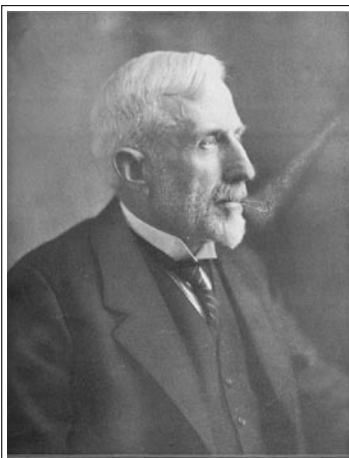
graphs from Geber (ca 1300) to mid-1800 Americans, the reader is provided a conversational walk through Smith's own extensive collection housed at the University of Pennsylvania (5). Probably the most widely acclaimed early survey of chemical history written in the US was a book by F. J. Moore, chemistry professor at MIT (6). It covered the broad span from ancients to early American chemists and was replete with 80 illustrations. The Kopp

legacy in Germany was sustained by the publication of two chemical histories by G. Graebe (1920) and P. Walden (1941), but now they were focused on organic chemistry (7). Walden published a general history of chemistry in 1947 and a revision in 1950 (8).

In the second half of the 20<sup>th</sup> century general histories of chemistry were appearing in both Britain and the US. Most extensive and invaluable as a reference is Partington's multi-volume set, which covers the field from its beginnings through the first half of the 1900s (9). Leicester had presented a historical background of chemistry from ancient times to the present, including radioactivity, a decade earlier (10). In 1964, the same year in which Partington's first segment appeared, the history by Ihde (11) was published; this has been recognized as the most detailed one-volume source, rich with citations, photographs, and appendices. Brock's *Fontana History of Chemistry* (12), also a general survey, appeared in 1992 and has been followed in 2005 by *Chemical History. Reviews of the Recent Literature*, edited by Russell and Roberts (13).

Meanwhile, in East Germany, the history of chemistry was growing as a specialization. Two publications in 1986 and 1989 originating from authors in Leipzig, Halle, Merseburg, and Jena (14) serve as encyclopedias of chemistry from ancient times to the present.

Morris has recently enumerated the myriad specialized histories of chemical industry in the second half of the 20<sup>th</sup> century (15). One entirely differently focused histori-

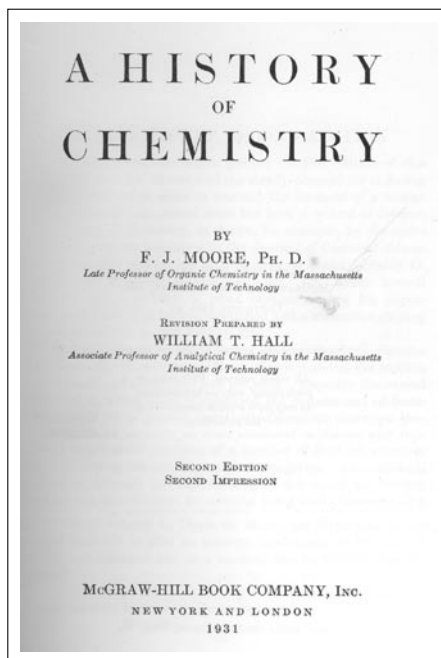


F. J. Moore

cal treatment deserving special mention is Hufbauer's account of the growth of German chemistry in the 18<sup>th</sup> century, published in 1982 (16).

## Periodicals

Over two dozen periodicals have originated since 1823, in which subjects on history or philosophy of science (including chemistry, of course), have been published. Many of these are listed in Table 1 in chronological order of their appearance. Because the coverage in most of these journals is much broader than chemistry and history, only a small part of their contents deals with either or both of these topics. E. F. Smith recognized the value of the creation of a journal devoted exclusively to the history of chemistry. Soon after the founding of HIST, he attempted to raise sufficient funding to start such a journal but was ultimately unsuccessful (17). Had he lived longer, he well may have accomplished his goal. The result in the US was that chemists with a professional interest in their history sought outlets for publication and exchange of information with other chemist historians. The appropriate periodicals fall into two categories: periodicals devoted only to chemistry and closely related fields and to those covering only history of science. In the former category are *Angewandte Chemie*, *J. Chem. Educ.*, *Chemie in unserer Zeit*, and *Chem. Heritage*; most of the remaining periodicals in the Table fit into the second category. Up until 1988 *Ambix* was the only periodical limited both to chemistry and history.



**Table 2. Publications in History of Chemistry in Selected Periodicals**

<u>Periodical</u>	<u>Publication Profile</u>	<u>Time Span</u>
<i>Annals Sci. (London)</i>	4 papers./year	1991-2005
<i>NTM</i>	13 papers/year	1993-2003
<i>Angew. Chem.</i>	4 papers/year	1930-1972
<i>Kultur Technik</i>	45 pp/year on chemically related history	2002, 2003

## Comparisons and Contrasts

The primary outlet for publications in chemical history for Americans, at the time of the founding of the HIST division and for several succeeding decades, was the *Journal of Chemical Education*. Smith published over a dozen biographies and several articles on the history of chemistry in the journal up to his death in 1928. C. A. Browne, the cofounder of HIST, authored nearly 30 articles, mostly lengthy, on subjects of chemical history. The record is probably held by Ralph E. Oesper for his publication of scores of short biographies of chemists, mostly German and French, and of a dozen longer papers on broader topics in chemistry. From its founding in 1924 through 1980, *J. Chem. Educ* typically provided 35-50 pages on chemical history annually, while only about ten pages on history appeared each year from 1981-1990. This reflects a change in editorial policy, not a diminution in scholarly activity by US chemist historians, who, like Smith back in the early 1920s, hoped for the establishment of a periodical devoted to history.

*Ambix*, the publication of the (British) Society of the History of Alchemy and Chemistry, founded in 1937, has provided a limited outlet for chemist historians, albeit mainly British.. In three issues per year, totaling on average 180 octavo pages, for example, nine papers were published (1991-2000). Some other periodicals, although not limited to chemistry topics, may have been overlooked by aspiring authors. These include *Annals of Science (London)*, NTM, *Angewandte Chemie (Angewandte Chemie Int. Ed. Eng. after 1962)*, and *Kultur und Technik*, published by the Deutsches Museum, Munich. Some features of these publications are assembled in Table 2. In the first three examples papers are published in English, but also German and French. It is noted that the extent of coverage of chemical history is indeed particularly modest in *Annals Sci. (London)* and *Angew. Chem.*

By 1980, with over 800 ACS members belonging to HIST, chemist historians in the US could reaffirm the need for alternative outlets for publication. An approach to a solution was to expand the HIST Newsletter to include essays or short papers describing research in chemical history. From this initiative there evolved the *Bulletin for the History of Chemistry*, published by the History of Chemistry Division, its creation largely a reflection of the imagination and perseverance of the founding editor, William B. Jensen. Issue No. 1 appeared in 1988, and the journal continues, now with two issues per year, Volume 32 being the 2007 offering.

## Conclusion

Chemist historians seeking an attentive audience for their scholarly publications in English have two periodicals at their disposal: *Ambix* and *Bull. Hist. Chem.*, both of which are dedicated solely to the publication of subjects on the history of chemistry. Thus, 84 years after Edgar Fahs Smith expressed the strong hope for an American journal for the history of chemistry, we can say his vision has finally been realized.

## REFERENCES AND NOTES

\* Presented before the History of Chemistry Division at the 233<sup>rd</sup> American Chemical Society National Meeting, Chicago, IL, March 27, 2007, HIST 39.

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## ABOUT THE AUTHOR

Paul R. Jones, Professor Emeritus of Chemistry, University of New Hampshire, and Visiting Scholar at the University of Michigan, Department of Chemistry, Ann Arbor, MI, 48109-1055, is editor of the *Bulletin for the History of Chemistry*.

## CALL FOR NOMINATIONS FOR THE 2008 EDELSTEIN AWARD

The Division of History of Chemistry (HIST) of the American Chemical Society (ACS) solicits nominations for the 2008 Sidney M. Edelstein Award for Outstanding Achievement in the History of Chemistry. This award, first given in 2002, honors the memory of the late Sidney M. Edelstein, who established the Dexter Award in 1956, and continues the tradition of the Dexter Award for Outstanding Achievements in the History of Chemistry, which was discontinued after 2001. Lists of previous recipients of the Edelstein Award and its predecessor Dexter Award are available at the HIST webpage (<http://www.scs.uiuc.edu/~mainzv/HIST/>).

The Edelstein Award is sponsored by Ruth Edelstein Barish and family and is administered by HIST. The recipient chosen to receive the Edelstein Award is presented with an engraved plaque and the sum of \$3500, usually at a symposium honoring the recipient at the Fall National Meeting of the ACS, which in 2008 will be held in Philadelphia, Pennsylvania, August 17-21. The award is international in scope, and nominations are welcome from anywhere in the world. Previous winners of the Dexter and Edelstein Awards include chemists and historians from the United States, Canada, Germany, France, the Netherlands, Hungary, and the United Kingdom.

A complete nomination consists of

- a complete curriculum vitae for the nominee, including biographical data, educational background, awards, honors, list of publications, and other service to the profession;
- a letter of nomination summarizing the nominee's achievements in the field of history of chemistry and citing unique contributions that merit a major award; and
- at least two seconding letters.

Copies of no more than three publications may also be included. Only complete nominations will be considered for the award.

All nomination materials should be submitted in triplicate to Peter J. T. Morris, Chair of the Edelstein Award Committee for 2008, Science Museum, London SW7 2DD, UK (email: [peter.morris@nmsi.ac.uk](mailto:peter.morris@nmsi.ac.uk)) for arrival no later than December 31, 2007.