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# IRA REMSEN AND AMERICAN CHEMICAL RESEARCH LITERATURE[1]

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WITH the return of peaceful conditions following America's wars with England, the energies of the people were soon directed intensively toward the development of the natural resources of the country and to the extension of its western frontier. An awakened sense of nationality and destiny, as well as a sense of the immensity of the task of material exploitation, had begun to influence all classes.

As a recent historian has pointed out:

> Over the mountains the great valley two thousand miles wide, with its unified river systems four thousand miles long, opened an empire such as man had never seen.

This intensive concentration of the nation's efforts toward the discovery of our natural resources and to the development of economic methods for their utilization in the arts naturally led to the creation of an urgent demand for trustworthy sources of information concerning the latest discoveries in both pure and applied science.

It was to meet this growing need that Benjamin Silliman, professor of chemistry and natural history at Yale College, founded the *American Journal of Science and Arts* in 1819.

This journal may justly be regarded as the forerunner of all American scientific periodicals. In the first number of the journal, Silliman outlined the scope of his projected periodical in these historically significant words:

[1] Read at the luncheon of the alumni of the Johns Hopkins University in attendance at the meeting of the American Chemical Society in Cincinnati, Ohio, April 8–13, 1940.

This journal is intended to embrace the circle of the Physical Sciences, with their application to the Arts, and to every useful purpose. It is designed as a deposit for *original American Communications;* it will contain also occasional selections from Foreign Journals, and notices of the progress of Science in other countries. Within its plan are embraced *Natural History,* in its three great departments of *Mineralogy, Botany* and *Zoology*—as well as *Chemistry* and *Natural Philosophy* and their various branches along with *Mathematics,* pure and mixed. It will be a leading object to illustrate *American Natural History,* and especially our *Mineralogy* and *Geology. The Applications* of these sciences are obviously as numerous as *physical arts,* and *physical wants;* for no one of these arts or wants can be named which is not connected with them. While science will be cherished *for its own sake* and with due respect for its own *inherent dignity,* it will be employed as the *handmaid to the arts.* Its numerous applications to *Agriculture,* the earliest and most important of them; to *Manufactures,* both mechanical and chemical; and to *Domestic Economy,* will be carefully sought out and faithfully made.

With this ambitious program, Silliman's journal made its appearance as America's first scientific periodical and, for one hundred and twenty years, it has continued to maintain its position as the dean of America's scientific journals. The pages of the early numbers of this journal afford a bird's-eye view of the state of scientific learning in the United States during its formative period, while the names of many of its scientific pioneers, along with an account of their experiments, furnish a wealth of interesting reading for the scientific historian.

Upon the death of Benjamin Silliman in 1853, his journal was carried on under the editorial supervision of his son, Benjamin Silliman, Jr., with the cooperation of James and Samuel Dana as co-editors.

The rapid growth of the country, together with the corresponding development of science, both pure and applied, ultimately compelled the editors to confine the scope of Silliman's journal to articles dealing solely with pure science. With this restriction of scope, the title of the publication was changed to the *American Journal of Science.* This change of policy may be regarded as marking the beginning of the process of journalistic segregation which has since that time proceeded at an ever accelerating pace.

Prior to 1879, several sporadic attempts had been made to establish a journal devoted exclusively to chemistry. Thus, in 1813, a single volume of scientific memoirs was issued by the Columbian Chemical Society, while from 1870–1877, a periodical known as the *American Chemist* was edited by Charles F. and William H. Chandler. This may properly be regarded as the first chemical periodical in America.

Although the American Chemical Society had already been organized in 1876, the first number of its journal did not appear until three years later, while it was not until 1893 that regular monthly numbers were issued.

Edward Hart had, in 1887, established the *Journal of Analytical Chemistry;* the title of this periodical was changed four years later to the *Journal of Analytical and Applied Chemistry.* This journal was subsequently merged with the *Journal of the American Chemical Society* in 1893, at which time its editorial supervision was entrusted to Dr. Hart.

Shortly after delimiting the scope of the *American Journal of Science,* its editorial staff took a further step which was destined to mark the beginning of a new era in American chemical publication.

The Johns Hopkins University had only recently opened its doors, and its chemistry department, under the direction of Ira Remsen, soon became a veritable Mecca for graduate students of chemical science. Shortly after assuming the chair of chemistry at Williams College, prior to coming to Baltimore, Remsen had begun to send papers embodying the results of his experimental researches to the *American Journal of Science.* After coming to Baltimore his chemical contributions to this journal steadily increased until, in 1879, the editor, James D. Dana, becoming alarmed at their number, was obliged to decline any further material from the Johns Hopkins laboratory. Referring to this incident in later years Remsen wrote:

> In a short time my manuscript was returned with the statement that it would be necessary to find some other place to publish my articles, as they seemed too highly specialized for a journal of general science. Professor Dana very kindly suggested that I start a journal myself. After corresponding with the leading workers in chemistry with discouraging as well as encouraging results, I decided to act upon the suggestion, and early in 1879 the first number of the *American Chemical Journal* was issued.

Thus, it came about that after sixty years as America's leading scientific periodical, the *American Journal of Science* found it impossible any longer to afford unrestricted space for the constantly increasing number of chemical papers submitted for publication. History was again repeating itself; for just as in 1819, following the country's struggle for independence, the *American Journal of Science* had come into existence to meet the need for a source of information in the field of general science, so in 1879, following the dark days of civil conflict, Remsen established the *American Chemical Journal* as a medium of publication for the rapidly multiplying papers resulting from the awakening of American institutions of learning to the importance of chemical research.

The task of launching a journal of this nature was an undertaking calling for both courage and wisdom. In assuming this task Remsen was undoubtedly in-

spired by the memories of his idol and one-time teacher, Liebig, of whom he later wrote:

> It was my good fortune to come under the influence of Liebig in my early years as a student of chemistry. For a full academic year I had the privilege of sitting at his feet and hearing him expound the elements of chemistry. I also came to know him, as a youth may know a master, and this association has been the chief inspiration of my life. Liebig impressed me so strongly that I have been led to study his life more carefully than I have ever studied any other life. And the more I have studied it the more strongly I have been impressed.

During his student days in Germany, Remsen had read through the entire *Annalen der Chemie* and thus quite unconsciously there had been imprinted on his mind a pattern of scientific journalism worthy of subsequent emulation. In fact, in the establishment of the *American Chemical Journal* we may well believe that Remsen treasured the secret hope that his journal might ultimately become the *American Annalen*.

Inspired by such an ambition and qualified by experience, both in teaching and research, Remsen's success as an editor was practically assured. Any doubts which he may have felt in this new undertaking were soon dispelled by the enthusiastic reception the journal received from members of the chemical profession both at home and abroad. In referring to the early days of the journal, Remsen wrote:

> The editor of the new journal was entirely inexperienced in the work that devolved upon him, and he owes much to the wise counsel and friendly co-operation of Professor Dana. At first, six numbers a year were published and there were many times when there was difficulty in filling these. By 1889 the supply of material had increased to such an extent as to lead to an enlargement. After this for seven years, eight numbers a year were issued. Beginning in 1896, ten numbers a year were issued; and, finally, in 1899, the Journal became a monthly publication, and even then it was found difficult at times to take care of all the material that was sent in.

That he was gratified by the success of his journalistic venture is reflected in a letter sent to his wife soon after the appearance of the first number of the periodical. He wrote:

> Yesterday I worked all day on matters connected with the Journal. I enjoy the work as proof is coming in every day, and it is really delightful to see the thing growing from day to day. I take a genuine pride in it.

Professor Remsen never relinquished the editorial supervision of his journal, despite ever-increasing official duties. Even when, as president of the Johns Hopkins University, the employment of an assistant-editor became necessary, he never wholly delegated his editorial duties to other hands. The meticulous attention given by him to his editorial duties have been entertainingly recalled by one of the assistant editors during this period. From these recollections we are privileged to catch a glimpse of that fabled retreat, "the editorial sanctum," of which the poet has written:

> Who would not be an editor.—To write
> The magic 'we' of such enormous might;
> To be so great beyond the common span
> It takes the plural to express the man;

While from these recollections we learn that the force of the editorial "we" was frequently invoked, at the same time we find that throughout the administration of his office as editor he was never unreasonable or dictatorial. He was insistent upon extreme care and promptness in correcting proof and was wont to become quite impatient with authors who would not promptly read and return their galley proofs. He often said that one great trouble with young chemists with their first papers in type was that they wanted to show the proof to all their friends without regard to the necessity of returning it to the editor without delay. Before being sent to the printer all copy was reread and carefully corrected, while particular attention was given to the observance of certain editorial conventions such as the proper use of the suffixes "in" and "ine." Instinctively an adept in the use of unambiguous, incisive English, Remsen's natural ability as a writer had been so whetted by experience as an author and lecturer that, when he assumed the role of editor, he had become a veritable master in the use of his native tongue.

It is not surprising, therefore, to find him debating with one of the professors in the department of English at Johns Hopkins as to whether one should write "20 grams *was*," or "20 grams *were* taken." He was also very particular as to correct orthography and on one occasion remarked: "A man is not a chemist until he learns how to spell guaiacol!"

It should be pointed out that he by no means accepted everything that was submitted to him for publication. Even at the risk of incurring the resentment of some of his would-be contributors, he consistently refused material which might tend to lower the high standard he had established for his journal. It should be repeated, however, that notwithstanding Remsen's insistence that authors must strictly conform to certain fundamental editorial rules and conventions which he had established, he was never unreasonable or inconsiderate in his editorial requirements. In fact, one who assisted him in his editorial labors has said of him, "Dr. Remsen, if anything, leaned backward in his efforts to be fair and absolutely impartial."

Thus it came about that the *American Chemical Journal* was soon regarded, both in this country and abroad, as one of the important chemical publications of its time. It has been justly appraised by Professor W. A. Noyes as "The first really scientific journal of research chemistry in America."

One needs only to scan its pages to find among its contributors those whose names constitute the honor-roll of American chemistry during the last quarter of the nineteenth century.

In 1915, upon the completion of the fiftieth volume, the *American Chemical Journal* was merged with the *Journal of the American Chemical Society*. This action was taken with Remsen's unqualified approval.

In referring to this eventful step, the retiring editor said:

> For a number of years the *American Chemical Journal* contained the principal original contributions that came from this country. It flourished beyond my expectations, but within the last few years it became evident to me that the journal of our society was coming more and more to be looked upon by American chemists as the best medium of publication of their contributions and, somewhat reluctantly and with a sacrifice of sentiment, I transferred my Journal to the tender mercies of the Society in full confidence that the interests of American chemists would, on the whole, be better served by consolidation than by separate existences.

And then he added with characteristic modesty:

> I think it probable that the *American Chemical Journal,* especially during the early years of its existence, exerted a stimulating influence upon chemical research in America, but no one can measure the influence, and it is perhaps idle to refer to it as a possible factor.

After having served for nearly a decade as editor of the *Journal of the American Chemical Society,* Dr. Hart was succeeded by Dr. William A. Noyes. It should be noted that both of these men had pursued graduate work at the Johns Hopkins University under Remsen. The former, who enjoyed the distinction of having been one of the first to receive one of the coveted graduate fellowships in chemistry at Baltimore, received his degree in 1879, while Dr. Noyes earned his doctorate three years later.

When the *American Chemical Journal* was incorporated with the *Journal of the American Chemical Society* we may well believe that Remsen felt no uncertainties as to the future welfare of his child on surrendering its editorial management to his former pupil, Dr. William A. Noyes.

In 1917, after fifteen years of distinguished service as editor of the journal of the society Dr. Noyes was succeeded by Dr. A. B. Lamb, the present editor. By this act the editorial mantle of Remsen and two of his pupils, Hart and Noyes, was transferred to the shoulders of a son of Harvard. It is scarcely necessary to point out that the traditions of former years are being cherished as a worthy heritage and despite the fact that "New conditions teach new duties," and although "Time makes ancient good uncouth," even so our journal continues to reflect the lofty aims of its founders.

With the dawn of the twentieth century the need for an American *Centralblat* had become apparent and, ultimately, in response to the desire of many of its members, the society inaugurated in 1907 the publication of *Chemical Abstracts.* Here again the editorial supervision of this new periodical was entrusted to two "Hopkins" chemists; initially to Dr. Noyes and subsequently to Dr. A. M. Patterson.

The day in American history was fast passing when a chemist could enjoy the distinction of knowing something about everything in his science and in place of this more or less unwarranted reputation came the urgent demand for a man knowing everything about some one thing in chemistry. Quite relentlessly the era of intensive specialization superseded that exceedingly comfortable period when a first-class chemist's knowledge of his subject was limited by practically no horizons. Journals devoted to highly specialized domains sprang into existence with bewildering rapidity until to-day no less than forty strictly scientific journals are to be found in our current American chemical literature. Among these the *Journal of Chemical Education* and the *Journal of Rheology* claim our attention because of the association of the names of two other "Hopkins" chemists with their editorial management. The first editor of the former was Dr. Niels Gordon, while the editor of the latter, since its inception, has been Dr. Eugene C. Bingham. Both of these gentlemen, it should be noted, trace their chemical ancestry back to Ira Remsen.

In addition to this imposing list of journals we must not omit to mention the valuable scientific and technological monographs sponsored by our society which have been appearing at frequent intervals since 1920 under the editorship of W. A. Noyes, John Johnston and Harrison E. Howe.

And to-day, when many a chemist is finding it well-nigh impossible "to keep abreast of (chemical) truth" and when, moreover, a slender income precludes the possibility of extensive subscription to chemical journals, another Remsen disciple, Dr. Atherton Seidell, brings forward the bibliofilm as a means of solving the difficulty. The future of this *multum in parvo* library can scarcely be foreseen, but it has already proven to be of inestimable value to research chemists residing in isolated sections of the country.

In this brief review of the history of chemical journalism in America one fact of especial interest to all Hopkins chemists stands out and that is that the imposing array of our chemical periodicals, and especially those sponsored by the American Chemical Society, may quite justly be regarded as "the lengthened shadow of one man"—Ira Remsen.