In Memoriam:
Henry Carrington Bolton, 29 January 1843 – 19 November 1903

To say that Henry Carrington Bolton was a bon vivant would be an understatement. By his own admission, he was “blessed with a healthy appetite,” which must have lead in part to his being described in later life as “bald, bearded, and chubby.” But his voracious cravings extended well beyond the culinary feasts in which he took such great delight. At the beginning of the 20th century he was, according to the New York Times, a member of more learned societies than any other living American. He left his imprint on the American Folklore Society, the National Geographic Society, the Numismatic and Antiquarian Society in Philadelphia; the Oology Society in Hartford, Connecticut; the Lunar Club in New York; and the Cosmos Club in Washington, to mention a few.

He wrote voluminously on a myriad of subjects. Fascinated by the singing sands at Manchester, Massachusetts, he traveled over 33,000 miles to study the phenomenon, from Hawaii to the Sinai Peninsula. He espoused the cause of the steamship Savannah, claiming this American vessel was the first steam-powered ship to cross the Atlantic, contrary to the then-popular belief that the English had done it first. He also was widely recognized as an accomplished photographer.

But there was one interest that continually held his attention from an early age—chemistry.
“To many intelligent and cultivated individuals not specifically instructed in chemistry,” he said, “this word recalls confused memories of colored liquids, glistening crystals, dazzling flames, suffocating fumes, intolerable odors, startling explosions, and a chaos of mystifying experiments, the interest in which is proportional to the danger supposed to attend their exhibition.” [Popular Science Monthly 29 (1886), 523.] For Bolton, it became his major profession. He earned a doctorate in Germany and spent time on the faculty at Columbia University and Trinity College in Connecticut. He was the earliest American expert on uranium and its compounds.

Although his technical accomplishments in chemistry were minimal by most standards, his legacy to future generations of chemists has withstood the test of time. A serious student of the history of chemistry and its alchemical roots, Bolton taught one of the first courses in the United States on that subject at George Washington University, thus helping to establish the field as a serious academic discipline.

From 1892 to 1894 he also held an appointment as a professor of bibliography, a rather unusual position but one that brings us to his grave today. For twenty years he led a committee on chemical bibliography for the American Association for the Advancement of Science, resulting in the production of bibliographies on many subjects. And he compiled two major bibliographies for chemists that are still in use today: Catalog of Scientific and Technical Periodicals (1665–1882) and Select Bibliography of Chemistry (1492–1904), which lists over 14,000 titles in chemistry.

In spring 2000, Herbert Pratt began to organize a group of chemists who shared his all-consuming passion for collecting books, especially those related to chemistry. There was no doubt in Pratt’s mind that the only person whose name should grace the new organization was Henry Carrington Bolton.

Today the Bolton Society has 67 members, bibliophiles who border on being bibliomaniacs, united by their bibliomaniac.

Bolton’s close friend, Frank Wigglesworth Clarke, chief chemist of the United States Geological Survey, said that “in his personal and social relations, Dr. Bolton was all that could be desired. Honest, faithful, straightforward, he was a delightful friend and companion, a man who was universally beloved. Higher praise than this cannot be given to any man.”

The members of the Bolton Society have strongly identified with Bolton’s interests and ideals, and his spirit lives on in our society and its activities. We come here today, on the exact centennial of his death on 19 November 1903, to lay this wreath in his memory and to thank him for his enduring legacy to chemists the world over.

— J. J. Bohning

[Remarks made at the grave of Henry Carrington Bolton in Sleepy Hollow Cemetery, Tarrytown, New York, on 19 November 2003.]

![Henry Carrington Bolton, circa 1883 (courtesy Edgar Fahs Smith Collection, University of Pennsylvania Library).](image)

**Henry Carrington Bolton: A Truly Renaissance Man**

Henry Carrington Bolton, chemist, bibliographer, folklorist, and historian, for whom the Bolton Society is named, was born in New York City in 1843. He was the only child of Jackson Bolton, a medical doctor, and Anna Hinman North. His grandfather, Curtis Bolton, was the wealthy head of a steamship company. Bolton graduated from Columbia College in 1862, after showing aptitude in mathematics and chemistry. During the years 1862 to 1866 he studied chemistry with some of the best minds in Europe—Jean Baptiste André Dumas and Charles Adolphe Wurtz in Paris; Robert Bunsen, Hermann Kopp, and Gustav Kirchhoff at Heidelberg; Friedrich Wöhler at Göttingen; and August Hofmann in Berlin. In 1866, the year his father died, Bolton was awarded a D. Phil. at Göttingen, for work “On the Fluorine Compounds of Uranium” (see page 6). During his four-year stay in Europe, Bolton traveled the whole of the continent, particularly in Switzerland, where he became an expert mountain climber.

On returning to the United States, he toured Canada and Mexico before settling in New York City. There he opened a private chemical laboratory, accepted a few students, and began to publish incessantly.

A book on the literature of uranium and an article on the history on the defunct elements, both published in 1870, were portents of the work that would win for him great distinction in bibliography and chemical history over the next quarter century. From 1872 to 1875 he had charge of the laboratory for analytical chemistry at the School of Mines at Columbia, under Charles F. Chandler. During the same period, he published work on the fluorescent and absorption spectra of uranium salts with Professor Henry Morton of the Stevens Institute of Technology. This was perhaps his most important chemical work.
It was Bolton who first suggested that American chemists should combine a celebration of the centennial of modern chemistry with Joseph Priestley’s discovery of oxygen. (Boltonia, No. 1, April 2001). The meeting in July 1874, in Northumberland, Pennsylvania, indirectly led to the founding of the American Chemical Society two years later.

From 1875 to 1877, Bolton was professor of chemistry at the Woman’s Medical College of the New York Infirmary. Then he taught chemistry at Trinity College, and over the next decade, he opened its new chemical laboratory, built an outstanding 3,000-piece mineral collection, published a student guide to quantitative analysis, and published three papers on the use of organic acids in the identification of minerals.

In 1885, Bolton published his Catalogue of Scientific and Technical Periodicals, 1665–1882. The second edition, in 1897, included the full titles of 8,603 journals, with translations of twenty languages. It also has chronological tables showing the year-of-issue for each of the 500 volumes and a checklist of libraries holding them.

After finding himself with a substantial income following the death of his mother, Bolton gave up teaching and returned to New York City to devote all his time to research and publication.

In 1892 he published his 1,212-page magnum opus, A Select Bibliography of Chemistry, 1492–1892, which will be discussed in more detail later.

In 1892 George Washington University appointed Bolton as non-resident lecturer on the history of chemistry. Although he was not the first to teach the subject in this country, he was the first to approach it as a professional. Fluent, humorous, and charming, he was always in great demand as a speaker.

In October 1893 Bolton married Henrietta Irving of New Brighton, New York, a great grandniece of author Washington Irving. A few years later the couple moved from New York to Washington, presumably because of that city’s splendid libraries. Their attractive home became a social center for the city’s scientific elite. Amiable and deeply religious, Bolton was admired for his geniality, culture, kindly spirit, and encyclopedic knowledge. It was said that Bolton was a member of more scientific societies than any other American. Among those in which he held office were the New York Academy of Sciences, where he served as secretary, vice president, president, and patron. He was also president of the American Association for the Advancement of Science and founded its section on chemical bibliography. He took active roles in the Washington Chemical Society, the District of Columbia Library Association, and the Council of the Scientific Alliance. He was founder of the American Folklore Society and the Literary Society of Washington, which counted among its members such notables as Alexander Graham Bell and President Theodore Roosevelt.

Just as Bolton’s bibliographies are an enduring monument to the depth of his scholarship, the breadth of his interests, and his dedication to a task, so are a sampling of topics covered by his more than 300 publications—action of light on uranium, counting-out rhymes for children, Russian transliteration, Chinese alchemy, glaciers, the early medical practice of women, microscopic crystals in the vertebrae of toads, Bolton family genealogy, humor in chemistry, fortune telling, Hawaiian pastimes, divination with mirrors, evolution of the thermometer, physics and faith, language used in talking to domesticated animals, and musical notes emitted by certain beach sands when they are stepped on. It seems that Bolton was equally at home with all subjects.

Bolton’s Bibliography of 1892, which he simply called “a labor of love,” spans four hundred years of scholarship and contains 12,031 titles arranged topically in seven sections—bibliography, dictionaries, history, biography, pure and applied chemistry, alchemy, and periodicals (Table 1). The two most extensive sections, pure and applied chemistry and alchemy, encompass 77 percent of the holdings.

Table 1: Summary of Bolton’s Bibliography

<table>
<thead>
<tr>
<th>Subject</th>
<th># Titles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliography</td>
<td>273</td>
<td>2.2</td>
</tr>
<tr>
<td>Dictionaries</td>
<td>327</td>
<td>2.7</td>
</tr>
<tr>
<td>History of chem.</td>
<td>730</td>
<td>6.1</td>
</tr>
<tr>
<td>Biography</td>
<td>979</td>
<td>8.1</td>
</tr>
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<td>Pure and applied</td>
<td>8,201</td>
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<td>Alchemy</td>
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</tr>
<tr>
<td>Total</td>
<td>12,031</td>
<td>100.0</td>
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</tbody>
</table>

I would like to know more about the criteria Bolton used to distinguish between some of his subject classifications, particularly why he called some works “alchemy” and others “chemistry.” By today’s definitions chemistry is a science that deals with the composition, structure, and properties of substances and of the transformations they undergo. In contrast alchemy was a medieval, speculative philosophy that purported to turn base metals into gold, to find a universal cure for disease, and to find a means of prolonging life indefinitely. Bolton must have found it difficult to sharply define the differences between these two and also the differences between the chemical sciences and technologies based on them.

I estimate that the Bibliography’s 29-page subject index contains about 450 major topical headings and thousands of author listings under the topical headings. The three most extensive author listings cover analytical chemistry, mineral waters, and agricultural chemistry, 680 in all. The enormity of Bolton’s task can be judged by the fact that proofreading alone required twelve months to complete.
Throughout the Bibliography, Bolton inserted perhaps as many as 500 explanatory notes. Many of the notes, short and to the point, give us glimpses of Bolton’s subtle humor. For example, the Lexicon Chymicum of 1741 has a 24-line title that prompted Bolton to write, “Had the author been able [to] he would no doubt have printed the entire work on the title page.” Then there is a 1631 history that Bolton described as “an example of great negligence joined to the strongest itch for making a book.”

In the life and writings of Hermann Boerhavve, I like Bolton’s extraneous note about the 1746 edition: “Books printed for Bernard Lintot at the Cross-Keys between the Temple-Gates in Fleet Street.” This address is still on modern maps, but I doubt the book shop has survived!

Bolton related that when Johannes Augurellus presented a poem to Pope Leo X (born in 1475), the latter rewarded the poet only with an empty leather purse, saying that since Augurellus knew so well how to make gold he could also easily fill the purse. Of another book, Bolton commented, “In this carelessly written work, the author says that ‘Joseph Priestley, [having been] exiled to America, became the friend of Jefferson Davis!’ ” Of course, that’s totally ridiculous because Priestley died in 1804, and Jefferson Davis was not born until 1808.

In an 1820 treatise by Frederick Accum on the adulteration of food, Bolton described the title page thusly: “From the representation of a skull and cross bones on the cover, and the Biblical quotation from 2 Kings 4:40, the book is now popularly called ‘Death in the Pot.’ ”

Bolton rates August Wilhelm Hofmann’s biographical sketches as “the work of a master who had the advantages of intimate acquaintances with the persons [about whom he wrote] and an appreciation of their scientific labors.” And he calls John Dalton’s New System of Chemical Philosophy of 1808 “an epoch making work, in which the immortal author established the atomic theory.”

Finally, consider this string of Bolton adjectives to describe a 16th-century alchemy book—“mystical, cabalistic, occult, inscrutable, whimsical, and valueless.”

Of particular interest to me are the 578 titles in Bolton’s private library, as indicated by an asterisk at the beginning of some titles in the Bibliography (Table 2). Except for two notes in the preface, these books are not otherwise mentioned. To find them, I had to ferret them out page by page. Alchemy constitutes a little more than 40 percent of the total.

Table 2: Titles in Bolton’s collection as marked in the Bibliography

<table>
<thead>
<tr>
<th>Subject</th>
<th># Titles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliography</td>
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<td>2.2</td>
</tr>
<tr>
<td>Dictionaries</td>
<td>10</td>
<td>1.7</td>
</tr>
<tr>
<td>History of chem.</td>
<td>103</td>
<td>17.8</td>
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<tr>
<td>Biography</td>
<td>90</td>
<td>15.6</td>
</tr>
<tr>
<td>Pure and applied</td>
<td>126</td>
<td>21.8</td>
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<td>Alchemy</td>
<td>235</td>
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<tr>
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<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>578</td>
<td>100.0</td>
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</table>

The bibliography also has two supplements. The first, published in 1899, added 5,554 titles and a second, published in 1904, added another 2,000 titles or more. Of the two supplements, only 38 items found their way into Bolton’s private collection (Table 3). Of the nine titles in pure and applied chemistry, six titles date from 1666 to 1799. Except for one item, the second edition of Priestley’s History and Present State of Electricity, which Priestley published in 1769, all the histories Bolton had were published in the 1890s.

Overall the alchemy books in Bolton’s collection outnumbered pure and applied chemistry by a margin of two to one, 235 to 126 (Table 4). From 1501 to 1600, alchemy outnumbered chemistry by about 4 to 1. But successive 100-year spans show that the ratio of alchemy to pure and applied chemistry dropped during successive centuries from 4.2 to 2.3 to 1.7 and finally to 1.1.

Table 4: 100-Year time spans for books owned by Bolton

<table>
<thead>
<tr>
<th>Years</th>
<th>Alchemy</th>
<th>Pure &amp; Applied</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501–1600</td>
<td>21</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>1601–1700</td>
<td>85</td>
<td>35</td>
<td>2.3</td>
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<tr>
<td>1701–1800</td>
<td>109</td>
<td>65</td>
<td>1.7</td>
</tr>
<tr>
<td>1801–1900</td>
<td>24</td>
<td>21</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>235</td>
<td>126</td>
<td></td>
</tr>
</tbody>
</table>

Apparently, Bolton was reasonably wealthy. Unlike many of us, he seemed to be able to afford any rare book that he could find. The oldest book in his collection was an alchemical work on natural philosophy by Albertus Magnus (ca. 1200), which was published in 1514. The second oldest was a 1583 chemistry, vel Magna Alchymia, written by Leonhard Thurneisser.

It appears that Bolton particularly singled out works by Michael Maier and Joseph Priestley. Maier’s works consist of nine alchemical treatises published between 1615 and 1708. As for Priestley’s publications, Bolton owned eight of his chemistries out of the nine titles listed in the bibliography.

Of the 470 periodicals in the 1892 Bibliography, only one appears in Bolton’s collection, namely The American Mineralogical Journal published in 1814 by Archibald Bruce, a physician. I found nothing unusual about this journal, but apparently it struck Bolton’s fancy.
The last section of the Bibliography, section eight, was devoted to more than 3,000 academic dissertations in chemistry and is indexed both by author and by subject. Following Bolton’s death in 1903, his widow donated his library of “1,631 volumes and pamphlets” to the Library of Congress, including his unpublished Catalogue of Uranium Compounds and his Treatise on Symbolism in Alchemy and Chemistry. Mrs. Bolton also gave to the library 160 engraved portraits of eminent scientists and four medals.

Somewhere along the way, most, if not all, of Bolton’s books were either de-accessioned or scattered among the Smithsonian’s general population of books. The trail is now cold. We may never learn their fate. But we do know that as book lovers, Bolton must still be among us in spirit.

The most definitive accounts of Bolton’s life are given in Popular Science Monthly 43 (1893), 688–695 and by Charles A. Browne in the Journal of Chemical Education 17 (1940), 457–461. A box of his papers (1873–1887) are in the manuscript division of the Library of Congress. —Herbert T. Pratt

Dr. H. Carrington Bolton recently gave a lecture before the Brooklyn Institute, and exhibited a number of lantern slides made from negatives taken on celluloid films in the Peninsula of Sinai. Dr. Bolton gave a very interesting account of his travels and spoke very favorably of celluloid. Having to travel for days upon the backs of camels, he found the new substitute for glass a great advantage on account of its lightness, and the pictures obtained were remarkably good, in many cases being of great beauty. In quite a number of difficult cases where there were strong contrasts of light and shade the negatives were very good, and gave excellent lantern slides with good details in the shadows.

H. Carrington Bolton, who has recently returned from a trip through the Sinai Peninsula, will give an address before the New York Camera Club on the evening of February 10th [1890], and from our knowledge of the gentlemen and his work, we promise the members a good evening’s entertainment. Dr. Bolton is a scientific traveler and an excellent speaker. Those of our readers who can obtain tickets should attend, and note the results of using the celluloid films from which the lantern slides were made to illustrate the lecture [21 (1890), 67].

Professor Bolton began his lecture with a few preliminary remarks, in which he said that his experience as an amateur photographer was only a little more than a year old. The main object of his trip to the peninsula of Sinai was in search of a noted locality where sonorous sand is found, and in order to clear up some discrepancies in regard to pictures of this celebrated sand-bank, in which two authorities differed so materially as to be totally unreliable. Wishing to bring back with him faithful records of the true state of affairs at the point of interest, he undertook to become practically acquainted with photography, which as a chemist he had understood theoretically for some years. Since his journey would have to be made with the aid of camels, and as every pound of weight was something to be carefully considered, he concluded to carry with him only celluloid films. Having mastered their manipulation under the guidance of Dr. A. A. Julien, of the School of Mines, Columbia College, he set forth upon his journey stocked with a large number of films. His pictures are certainly a wonderfully good exhibit of the capabilities of this new substitute for glass. Some of them are spotted in places and look somewhat strange, nevertheless the percentage of poor pictures is very small, and he assured us that if he had the journey to make again he would most certainly take films in preference to glass plates, the question of weight being so important and the failures with films comparatively few. This is certainly very much to say in favor of the celluloid support, especially when we consider how recent has been its production on a commercial basis.

In his journey up the Nile he caught many pretty and characteristic views of this noted stream, and his description of the various pictures was exceedingly interesting; by far the larger part of them being scenes not usually noted by the traveler. Among other excellent views were several of the interiors of the tombs of the sacred bulls of Apis, taken with the magnesium flash-light. These were some of the best work of the kind we have seen—clean, well-defined, and as bright as if taken in.
sunlight. Pictures of the Bedouins, the camel train, the various native towns, oases and other objects of interest in the desert of Sinai, all showed that the Doctor is certainly an amateur of more than ordinary skill. Arriving at Mount Sinai, he obtained an excellent view of the Greek monastery, also a picture of Photius, the deposed Patriarch of Jerusalem, who has charge of it. He also showed excellent views of the interior as it now is, and some curious copies of lithographs of the old church, which he obtained from books still preserved in the monastery. The country around Sinai is wild and rocky, and almost entirely devoid of water. Some excellent views of this rough scenery gave an idea of the character of the country through which he passed.

Dr. Bolton evidently made good use of his camera and films, and the members of the New York Camera Club had an uncommonly good opportunity of seeing views of a country where very few travelers venture, and a still smaller number of photographers. Judging from the crowded condition of the rooms and the attention of the audience, the lecture was thoroughly enjoyed by all present [21 (1890), 117–118].

Dr. H. Carrington Bolton is now en route for the Hawaiian Islands, to continue his study of sonorous sands. He carries with him several cameras, and also lenses of different foci, fitted with bayonet catch attachments, enabling him to rapidly change the lenses without unscrewing them from the flanges or using different front boards [21 (1890), 196–197].

Our good friend Dr. H. Carrington Bolton has recently returned from the Sandwich Islands and brings back much information both of scientific and photographic interest. [21 (1890), 548].

Bolton’s Doktor der Philosophie Dissertation

In the “golden age” of chemistry in Germany, roughly the second two-thirds of the nineteenth century, students came from near and far to study under one or more professors in one of the 22 existing universities. Those from the United States and Great Britain were no exception, for opportunities for advanced studies in their home countries were severely limited or nonexistent. While American and British students could attend lectures at Harvard, Yale, Oxford, and Cambridge presented by professors who were, for the most part, self-taught, and would observe at best lecture demonstrations from afar, the advanced German students were engaged in individual research projects under the training system attributed to Justus von Liebig in Giessen.

Liebig’s model was soon copied at other German universities, and so Germany became a mecca for foreign students who wanted to acquire laboratory training beyond the baccalaureate level.

Who were these German-trained chemists, who returned to Britain and America to found research laboratories and strong academic programs? That was the question I posed for my sabbatical in 1982–1983, which I spent at the Deutsches Museum in Munich. Although several valuable primary sources were helpful in gaining some of this information, much of the prior documentation had been based on secondary sources, such as two papers by H. S. Van Klooster in the Journal of Chemical Education, “Friedrich Wöhler and His American Pupils,” 21 (1944), 158–170; and “Liebig and His American Students,” 33 (1956), 493–497.

Furthermore, many English-speaking chemists had been described as having “studied under Liebig” or “worked in the laboratory of Bayer”; but these vague qualifications lack detail and documentation. Hence, I set out to find the dissertations written by English-speaking chemistry students at German universities. Although some records from the Deutsches Museum and the Bayerische Staatsbibliothek were useful, the majority of the information came from a third source.

It was my good fortune to discover that the universitätsbibliothek in Munich housed a complete set of chemistry dissertations from all German universities, dating from the early 1800s. Unlike the physics documents, these had survived the Allied bombings of 1944. Octavo in size and tied with string in bundles of about 20 each, they were stored together and not mixed with others in different disciplines. They numbered around 14,000! I was given permission to enter the stacks and to examine them, one-by-one, in order to identify those written by British or American students, who could be identified on the dissertation cover as “aus Amerika” or “aus London.”

I photocopied the essential pages—title, acknowledgment, biographical sketch—and brought them home. The number of dissertations written by American and British students totals nearly 800, almost equally distributed between the two countries. Göttingen was the institution of choice, followed by Leipzig.


One of those Göttingen Doktor der Philosophie students was Henry Carrington Bolton, who finished his degree under Friedrich Wöhler and August Hofmann in 1866. He is one
of a few students who wrote his dissertation in English. Bolton’s *A Select Bibliography of Chemistry, 1492–1892* includes dissertations from German universities. I found this useful to verify some of the information gained from other sources.

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**Henry Carrington Bolton and the ACS New York Section**

Henry Carrington Bolton spent a good portion of his 60 years in New York City during three time periods. He was born in New York City in 1843 and stayed until he graduated from Columbia University in 1862. The second period, from 1867 to 1877, was after he returned from his graduate studies in Germany to open a private research lab and become professor of chemistry at Columbia and the Woman’s Medical College. At Columbia, he was in charge of the analytical laboratory under Charles Chandler. The third period, from 1887 to 1896, was after he retired and became nonresident lecturer in the history of chemistry at the George Washington University. During this third period Bolton was instrumental in the formation of the New York Section of the American Chemical Society (ACS). The New York Section was chartered by the board of directors of the ACS on 30 September 1891—the second local section after Rhode Island. Bolton attended an informal meeting of the section on 29 April 1892 in the University Building of New York University, “to perfect the organization of the New York Section.” At this meeting, certain rules were established for the governance of the section, and officers were elected. Bolton was elected to the first executive committee, along with A. A. Breemen and William McMurtie.

At this meeting Bolton moved that all members of the ACS residing within 30 miles of New York City would become members of the section and that “the Secretary be instructed to notify them of this fact.”

The first official meeting of the newly formed section was held on 6 May 1892. Bolton was one of three members appointed as delegates to the Council of the Scientific Alliance in New York. On 16 November 1892, the section held a joint meeting with the Scientific Alliance at the American Museum of Natural History.

At a meeting of the section on 4 November 1892, it was voted that a committee “request suitable persons to address the section upon such subjects as may appear appropriate.” Soon after this Harvey Wiley presented a paper on “The Determination of Levulose and the Detection of Adulteration in Honey,” and E. R. Squibb presented a paper “On Absolute Alcohol.”

The only mention of a presentation by Bolton was at the section’s 2 December 1892 meeting, where he exhibited a work on chemistry by Emanuel Swedenborg, a noted Swedish scientist, philosopher and theologian. One can only speculate that Bolton’s interest in the history of chemistry did not coincide with the interest of the section to hear research papers on chemistry.

In any event, on 6 October 1893, Bolton submitted a letter to the section announcing his inability to serve as an officer in the coming year. Only one additional mention of Bolton appears in the minutes, when he served on a committee to make arrangements for the ninth National Meeting of the ACS which was held in Brooklyn on 15 and 16 August 1894.

In 1896 Bolton moved from New York to Washington, D.C., where, according to Charles A. Browne, “the large Government libraries afforded unequaled opportunities for bibliographic and historical research. His refined and attractive home became a social center of Washington scientific circles, and here he labored until his untimely death on 19 November 1903.” [Journal of Chemical Education 17 (1940), 457–461].

—John B. Sharkey

Pace University

Information taken from the handwritten Minutes of the ACS New York Section, 1891–1899, Volume 1. These minutes are the property of the ACS New York Section, Inc.
Dr. H. Carrington Bolton, in his plan for a library of science in New York, gave many interesting facts relative to libraries of New York and its sister cities, arguing in favor of bringing together under one roof all the libraries of the societies in the Alliance [The Scientific Alliance of New York, which included the New York Academy of Sciences and the ACS New York Section]. He advised having a building 100 x 120 feet square, four stories high in front, with a lecture room, in the rear, large enough to seat 1,000 persons. The library rooms should have shelves to accommodate 800,000 volumes. There should be an office for general business, several small rooms for ordinary meetings of the separate societies, photographic and microscopic laboratories and a general reception room.”

Science 22 (1893), 66.

The idea that European and American children engaged in “counting out” for games are repeating in innocent ignorance the practices and languages of a sorcerer of a dark age is perhaps startling, but can be shown to have a high degree of probability. . . . Many circumstances make this view plausible, and clothe the doggerels with a new and fascinating interest.”


Mr. H. Carrington Bolton is desirous of collecting words and expressions (oaths excepted) used in addressing domesticated animals. In particular he seeks information as to (1) the terms used to hasten, haw, gee, back and stop. . . . animals in harness; (2) terms used for calling in the field cattle. . . ; (3) exclamations used in driving from the person domesticated animals; (4) any expressions and inarticulate sounds used in addressing domesticated animals for any purpose whatever. . . .”

Science 11 (1888), 70–71.

We believe the sonorousness in sands of sea-beaches and of deserts to be connected with thin pellicles or films of air, or of gases thence derived, deposited and condensed upon the sand-grains during gradual evaporation after wetting by the seas, lakes or rain. By virtue of these films the sand grains become separated by elastic cushions of condensed gases, capable of considerable vibration, and whose thickness we have approximately determined. The extent of the vibrations, and the volume and pitch of the sounds thereby produced by any quick disturbance of the sand, we also find to be largely dependent upon the forms, structures, and surfaces of the sand-grains, and especially upon their purity. . . .”


Miss Henrietta Irving of this place [New-Brighton, Staten Island] and Dr. Henry Carrington Bolton, president of the New York Academy of Sciences, were married this afternoon at Christ Church, of which the Rev. Pierre Irving, grandfather of the bride, was the first pastor. The wedding was a very quiet one, owing to a recent death in Miss Irving’s family. . . . The bride was given away by her brother. . . and was unattended. She wore a traveling dress of grey Henrietta cloth, and a hat of the same color. Sidney Smith of New York was the best man, and the ushers were Austin McCullough and John Irving, cousins of the bride. Immediately after the ceremony Mr. and Mrs. Bolton started on an extended European trip, during which Mr. Bolton will continue his scientific investigations.”


Bolton Society, an organization of chemical bibliophiles. As a subsidiary of the Chemical Heritage Foundation, the Bolton Society promotes the individual love for and collection of all types of material related to the history and development of the chemical sciences and related technologies. It also advances the cause of the Donald F. and Mildred Topp Othmer Library of the Chemical Heritage Foundation. For more information on the Bolton Society, contact the Secretary.

Founder and Chief Bibliophile:
Herbert T. Pratt
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