Encounters with Chemistry

H. P. Lovecraft

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Many famous nonchemists have left behind accounts of their first encounter with chemistry. Whether the person in question was a psychologist, a writer, a critic, an artist, an economist, a mathematician, or a philosopher, whether the experience was brief or prolonged, whether it was pleasant or unpleasant, the purpose of this series is to record these encounters and do to so in the person's own words whenever possible.

The name of H. P. Lovecraft (figure 1) is instantly recognized by every reader of the modern horror story. Known during his lifetime to only a small circle of correspondents and readers of pulp fiction magazines, Lovecraft is today recognized as the founding father of 20th-century horror fiction, playing much the same role in this century as Edgar Allen Poe had in the 19th century. He is now the subject of two major biographies[1] and numerous shorter monographs and encyclopedia entries. Five volumes of his collected letters have been published, as well as many editions of his short stories and novelettes, including a recent collection in the prestigious *Library of America* series.[2]

Perusal of the various biographies and his collected letters quickly reveals that Lovecraft had originally hoped to become either an astronomer or a chemist rather than a writer of horror fiction. Though briefly mentioned in passing in earlier correspondence, Lovecraft first gave a detailed description of his initial childhood encounter with chemistry, around age 8, in a letter written to Reinhardt Kleiner in November of 1916:[3]

In 1899 a new interest began to gain ascendancy. My predilection for natural science, fostered by my Aunt Lillian, took the form of a love of chemistry. A friend of ours is Prof. John Appleton, the venerable professor of chemistry at Brown and author of many books on the subject. He presented me with his own book for beginners – "The Young Chemist," and before many months had elapsed, I was deep in experimental research, having a well equipped laboratory in the cellar, which my grandfather had fitted up for me. In March 1899, I began to publish a chemical daily paper called "The Scientific Gazette," of which I made four carbon copies for "circulation." How I managed to keep this thing in existence for seven years, as I did, is still a mystery to me. However, it soon degenerated into a weekly!

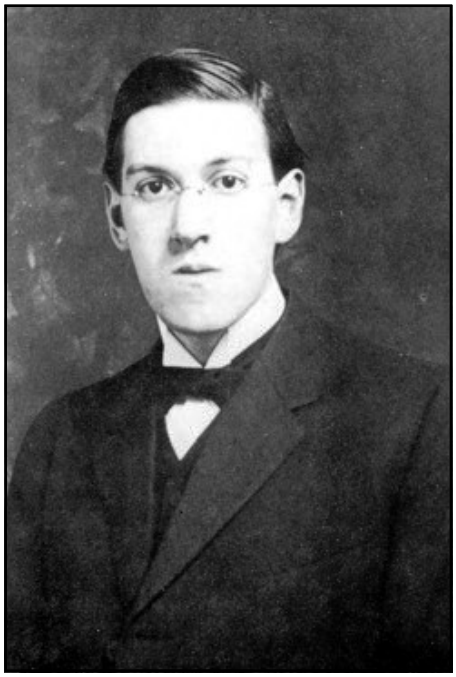


Figure 1. Howard Phillips Lovecraft (1890-1937)

An expanded version of this initial encounter was given, with slight variations, in a letter written to Alfred Galpin in August of 1918:[3]

The science of chemistry, in which I am glad to find you interested, first captivated me in the Year of Our Lord 1898 – in a rather peculiar way. With the insatiable curiosity of early childhood, I used to spend hours pouring over the pictures at the back of Webster's "Unabridged Dictionary" – absorbing a miscellaneous variety of ideas. After familiarizing myself with antiquities, mediaeval dress and armor, birds, animals, reptiles, fishes, flags of all nations, heraldry, etc., etc., I lit upon the section devoted to "Philosophical and Scientific Instruments." I was veritably hypnotized with it. Chemical apparatus especially attracted me, and I resolved (before knowing a thing about science!) to

have a laboratory.

Being a "spoiled child" I had but to ask, and it was mine. I was given a cellar room of good size, and provided by my elder aunt (who had studied chemistry at boarding school) with some simple apparatus and a copy of "The Young Chemist" – a beginner's manual by Prof. John Appleton of Brown – a personal acquaintance. "The Young Chemist" was just the book for me – devoted to easy and instructive experiments – and soon I was deep in its pages. The laboratory "work" – or play – seemed delightful and despite a few mishaps, explosions, and broken instruments, I got along splendidly. Soon I acquired other books, and began (March 4, 1899) to issue a chemical magazine called "The Scientific Gazette," which I maintained for eight years ... By 1901 or thereabouts I had a fair knowledge of the principles of chemistry and the details of the inorganic part – about the equivalent of a high-school course, and not including analysis of any kind.

And yet a third version of these events appears in a letter written to Bernard Dwyer in March of 1927:[4]

Figure 2. One of the plates from Webster's *Unabridged Dictionary* dealing with "Philosophical and Scientific Instruments" that piqued Lovecraft's interest in science.[5]

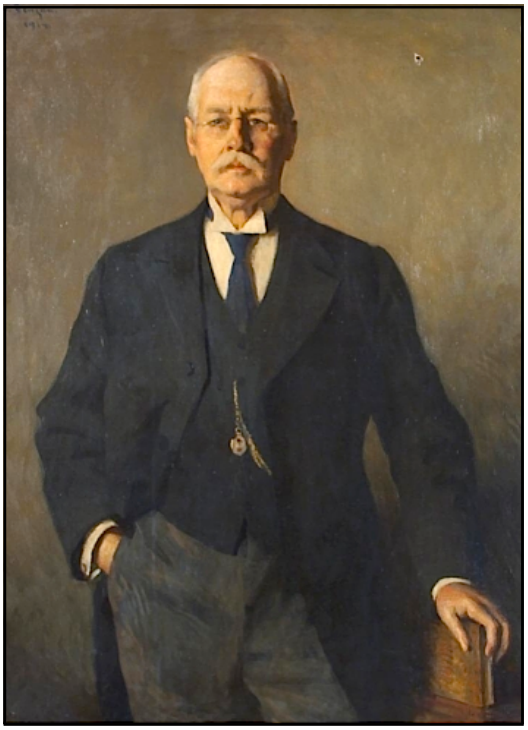


Figure 3. John Howard Appleton (1844-1930)

Although I am basically an aesthete with a non-mathematical mind, I became utterly infatuated with the pages of illustrations of "Philosophical and Scientific Instruments" in the back of Webster's "Unabridged" of 1864. After that I would give my mother and grandfather (my father being no more) no peace till they had fitted me up with a chemical laboratory in the basement of our home, and there I dabbled in reagents and precipitates from March 1899 onwards, plowing feverishly through such chemical primers as "The Young Chemist" by Prof. John Appleton (of Providence) which I still consider the best general introduction to the subject, though it is now virtually forgotten. Literature I spurned altogether as unworthy of a "serious scientist," but my prose practice continued through my repeated attempts to write a chemical treatise.

As is perhaps natural, given the time lapses between these various accounts, there are some inconsistencies. Thus in the first and second accounts it is Lovecraft's older aunt Lillian who plays a key role in encouraging his interest in chemistry, whereas by the third account she has disappeared altogether and is instead replaced by his mother and grandfather. In the second and third accounts the plates in Webster's dictionary (figure 2) play a role, whereas no mention of

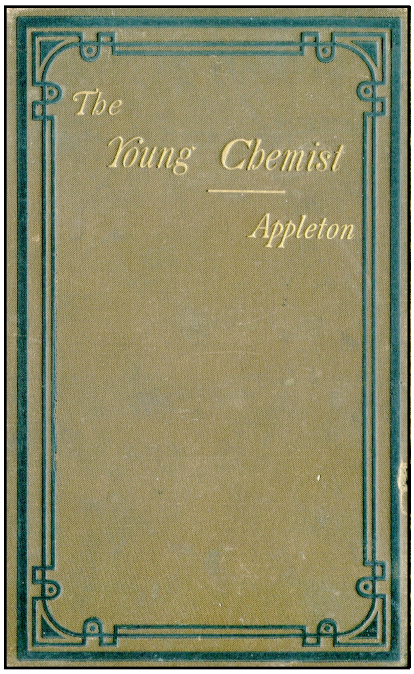


Figure 4. The cover of John Appleton's 1878 laboratory manual *The Young Chemist*.

them is found in the first account. In the second account it is his aunt Lillian who presents him with the necessary equipment and chemicals, whereas in the first and third accounts it is his grandfather. Finally, in the first account it is Professor John Appleton who personally presents Lovecraft with a copy of his laboratory manual, *The Young Chemist*, whereas in the second account it is given to him by his aunt Lillian and may have been a copy used by her when studying chemistry in boarding school.

John Howard Appleton (figure 3) was born on 03 February 1844 in Portland Maine. While still a child, his family moved to Providence RI, where he later attended Brown University, receiving his bachelor's degree in 1863 and a master's degree in 1869. Starting as an assistant instructor in analytical chemistry at Brown in 1863, he advanced to full instructor in 1865 and to Professor of Applied Chemistry in 1868 – a position which he held until his retirement at age 70 in 1914. He also served as the Rhode Island State Sealer of Weights and Measures, a term as Vice-President of the American Chemical Society, and remained active in campus affairs until his death on 18 February 1930 at age 86.[6]

The Young Chemist (figure 4) was published in 1878 and was Appleton's second book.[7, 8] Despite its unusual title, it was not specifically intended for use by your typical amateur home chemist, but was rather a standard laboratory manual for the introductory chemistry course at Brown. Only 110 pages in length, it may have been used by some local secondary schools as well, since it is very elementary, heavily illustrated with woodcuts, and written in a simple, albeit rather terse, prose style. All in all, it is easy to see why it appealed to the eight-year old Lovecraft.

To the best of my knowledge, the book never saw another edition and so was over 20 years old when Lovecraft first encountered it in 1899.[9] Whether it was a copy used by his aunt Lillian or a remainder given to him by Appleton himself is impossible to determine, largely because the exact nature of the relationship between Appleton and Lovecraft's family was never spelled out in detail. However, it is of interest to note that Appleton lived at 209 Angell Street in Providence – a mere two blocks from Lovecraft's home at 454 Angell Street.[6]

It must be confessed that Appleton's little laboratory manual was already somewhat out of date when it was first published in 1878 and was woefully so by 1899. The classification used to organize its experiments in descriptive inorganic chemistry predates the periodic table, already proposed by Mendeleev in 1869. It first divides the elements it deals with into nonmetals and metals and each of these, in turn, into monads, dyads, triads and tetrads, though these terms, which refer to the principle valence values of the elements in question, are never explained to the student. Indeed, Appleton incorrectly classifies aluminum as a dyad rather than a triad, despite giving the correct formula for its sulfate as $Al_2(SO_4)_3$.

Even though the book uses the newer atomic weight values, it contains several incorrect formulas Thus, for example, Appleton incorrectly writes $CaCl_2O_2$ instead of $Ca(OCl)_2$ and CaO_2H_2 instead of $Ca(OH)_2$. Likewise several of his chemical equations are incorrectly balanced. Thus he incorrectly writes:

$$Na_2 + 2H_2O = 2NaOH + H_2$$
$$H_2 + O = H_2O$$
$$KClO_3 = KCl + O_3$$

instead of:

$$2Na + 2H_2O = 2NaOH + H_2$$
$$2H_2 + O_2 = 2H_2O$$
$$2KClO_3 = 2KCl + 3O_2$$

Also in some places his wording is highly problematic. Thus he rather strangely describes both CaF_2 and HF as "forms" of fluorine rather than as "sources" of fluorine.

Lastly, since this lab manual contained no organic chemistry, Appleton says nothing of standard structural formulas in which the various atomic symbols in a

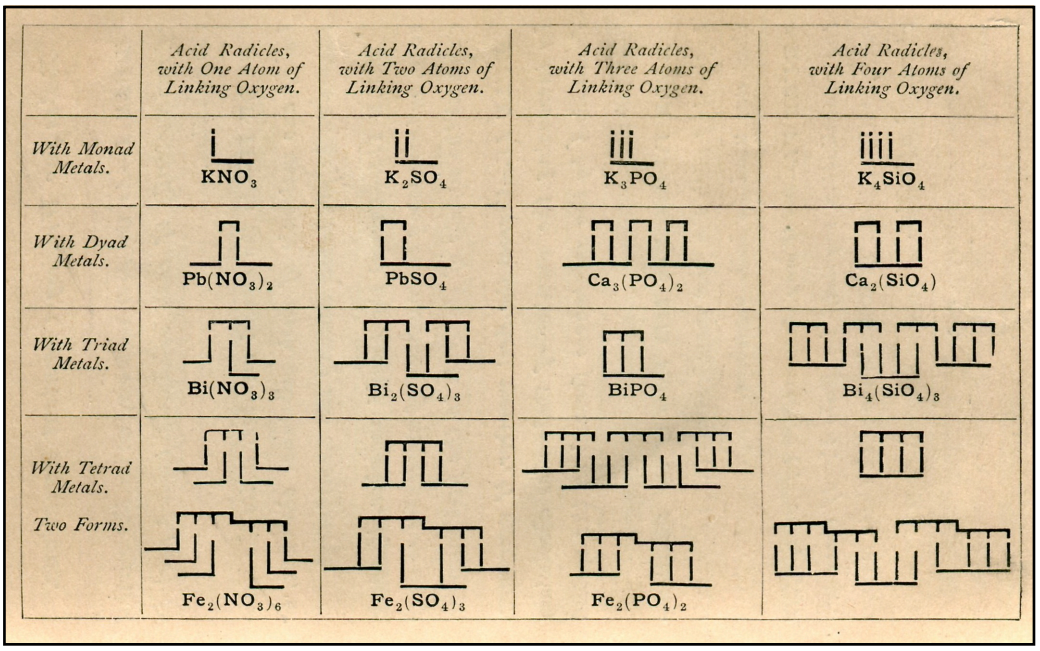


Figure 5. Appleton's version of Kekulé -Wilbrand graphic formulas, which by 1878 were already outdated.

compound are interconnected by means of bond lines. Instead he introduces an outdated graphic symbolism (figure 5), which he incorrectly attributes to Kekulé, but which was in fact introduced by a chemist named Wilbrand in 1865.[10] As we will shortly see, Lovecraft's apparent lack of familiarity with common structural formulas would have dire consequences for his future study of chemistry. Of course, all of these theoretical deficiencies were most likely irrelevant to an eight-year old boy compared with the color changes, pops and stinks of the actual experiments themselves, and it is Lovecraft's rosy remembrance, in his third account, of these alone which no doubt explains why he was still recommending the book to a correspondent 27 years after the fact.[4]

Before leaving this topic, one final feature of Appleton's lab manual should be noted – namely that its publisher appended a *Directory and Book List* of various laboratory supply houses selling the chemicals and apparatus required for doing the experiments described in the manual, including one in Providence

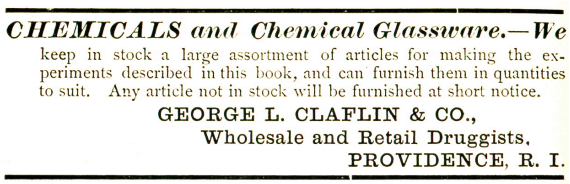


Figure 6. An advertisement in the back of Appleton's *The Young Chemist*, indicating where the necessary chemicals and apparatus could be purchased in Providence.

(figure 6), as well as offering more advanced chemistry texts for sale. It is not known whether this was still of use, twenty years later, to either Lovecraft's aunt or grandfather when it came to supplying him with the necessary chemicals and apparatus, or to Lovecraft himself when it came to acquiring the additional chemical texts mentioned in his second account.

As we have seen, Lovecraft's first encounter with chemistry basically lasted from age 8 (late 1898/early 1899) until age 11 (1901). From this point on his primary obsession was astronomy, as well as various historical and literary interests. It was not until 1906, at age 16, that his interest in chemistry was once more revived as a result of taking a physics course his sophomore year of high school:[3, 11]

Not until 1906 did chemistry come into my life again. In that year I encountered physics in high school, which reawakened my dormant laboratory instincts, and led me back to the study of matter, its constitution and properties. I increased my chemical library by fully twenty volumes – to say naught of the physics textbooks I bought – and obtained a plentitude of new instruments. I was now in a smaller house, with a smaller laboratory, but this new room was ample for the purpose. In 1907 I took chemistry in high school, but since I knew all the course before, had more fun than instruction in the classroom ... I reveled in physics and chemistry – subjects I was also studying at home. I had a small and pretty well equipped basement laboratory of my own, but the chance to use the great school

laboratories was a rare delight.

As already mentioned, Lovecraft's original home laboratory had been located in the basement of his grandfather's home at 454 Angell Street, where he lived with his mother. However, upon the grandfather's death in 1904, Lovecraft and his mother were forced to move, and by the time he entered high school they were renting half of a duplex located further up the street at 598 Angell Street, where his relocated and downsized laboratory was once again consigned to their half of the basement.

Lovecraft's surviving school records confirm that he did well in both physics and chemistry, receiving the equivalent of an A in both courses.[12] This was in keeping with his plans to study astronomy at Brown University after graduation and hopefully to eventually become a Professor there. However, these plans were dashed when he received the equivalent of a C in algebra both his freshman and sophomore years. Though he managed to up his grade to a B by voluntarily retaking the second algebra course his junior year, the resulting strain was too much for him and he had a nervous breakdown. As a result, he never graduated from high school and never obtained a college degree. This devastating encounter with algebra was further reenforced by a serious personality conflict with the teacher and resulted in Lovecraft's later conviction that, despite having received an A- in geometry his sophomore year, he was totally devoid of any mathematical ability.[11]

Knowing that this defect precluded a career in astronomy, he apparently found the collapse of his dreams too much to bear. Deeply humiliated and embarrassed by his failure, Lovecraft instead withdrew into a shell during which he avoided most social contact. This self-imposed withdrawal lasted into his early 20s and little is known of his activities during this period. However, a passing comment in one of his later letters suggests that, in lieu of a career in astronomy, during this period he played with the idea of a career in chemistry instead, which he considered to be less mathematical:[3]

Yet at home I continued my chemical studies, dabbling in a correspondence course which helped me in matters of analysis and organic chemistry previously neglected by me.

The correspondence course in question was doubtless one of many offered by the International Correspondence Schools (ICS) of Scranton, Pennsylvania (figure 7). These were intended for industrial workers hoping to improve their employment situation and, in the case of chemistry, were largely of the "From bottle washer to chief chemist" success variety. In any case, it is very difficult to imagine that Lovecraft would have been happy working as an industrial bench chemist consigned to doing routine and highly repetitive chemical analysis rather than true chemical research. But, as events turned out, even this career possibility collapsed when Lovecraft discovered that he hated organic chemistry:[3]

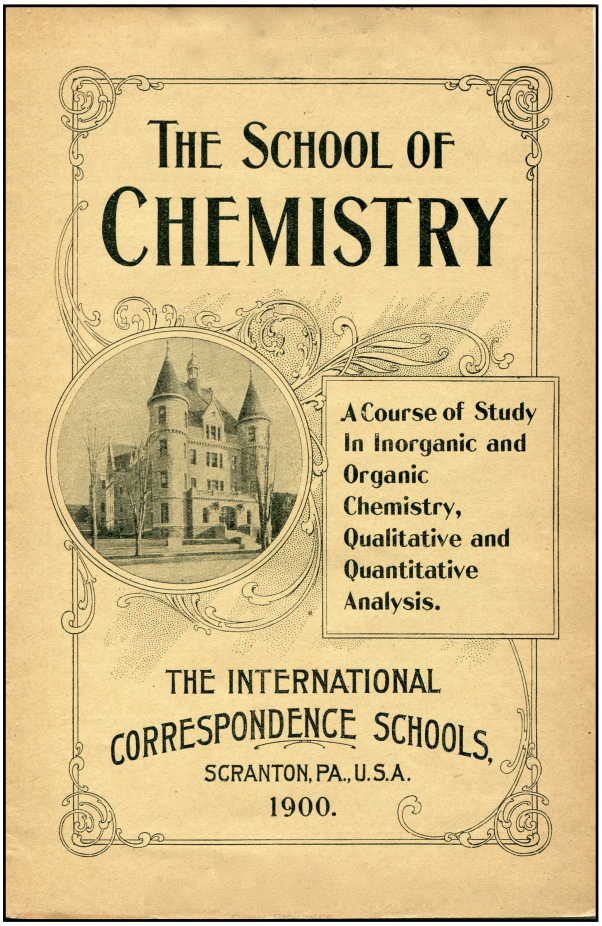
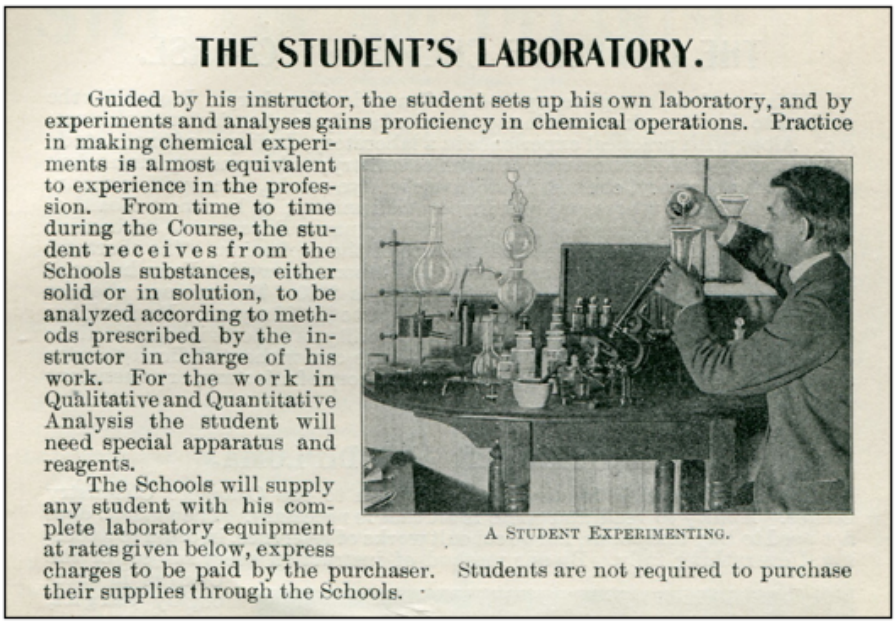


Figure 7. A circa 1900 pamphlet advertising the various chemistry courses offered by the ICS of Scranton PA.

Between 1909 and 1912 I tried to perfect myself as a chemist, conquering inorganic chemistry and qualitative analysis with ease, since they had been favorite pastimes of my youth. But in the midst of organic chemistry, with its frightfully dull theoretical problems and involved cases of isomerism of hydrocarbon radicals – the benzene ring – etc., etc. etc. – – – – I found myself so wretchedly bored that I positively could not study for more than fifteen minutes without acquiring an excruciating headache which prostrated me completely for the rest of the day.



THE STUDENT'S LABORATORY.

Guided by his instructor, the student sets up his own laboratory, and by experiments and analyses gains proficiency in chemical operations. Practice in making chemical experiments is almost equivalent to experience in the profession. From time to time during the Course, the student receives from the Schools substances, either solid or in solution, to be analyzed according to methods prescribed by the instructor in charge of his work. For the work in Qualitative and Quantitative Analysis the student will need special apparatus and reagents.

The Schools will supply any student with his complete laboratory equipment at rates given below, express charges to be paid by the purchaser. Students are not required to purchase their supplies through the Schools.

A STUDENT EXPERIMENTING.

Figure 8. The provisions provided by the ICS in order to supply the students taking its correspondence courses in both qualitative and quantitative analysis with the necessary chemicals and apparatus.

Lovecraft's successful completion of the correspondence course in qualitative analysis required extensive lab work and it is of interest to speculate whether he already had sufficient chemicals and apparatus in his home laboratory for this purpose or had to purchase additional items from the correspondence school, which offered to sell and ship them by mail to students taking the course (figure 8).

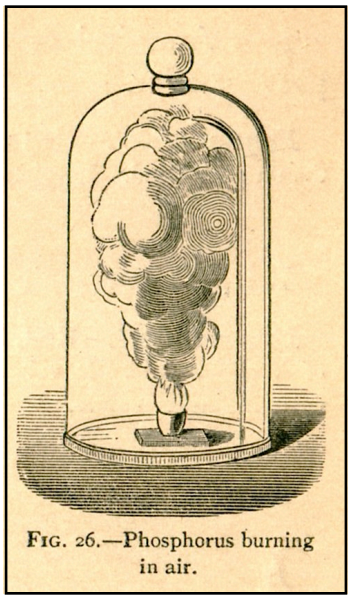


FIG. 26.—Phosphorus burning in air.

Figure 9. The figure accompanying the experiment dealing with the combustion of phosphorus in Appleton's 1878 laboratory manual, *The Young Chemist*.

By age 22, Lovecraft's final flirtation with chemistry had come to an end and he gradually closed down his home laboratory:[3]

By 1912 I had practically ceased to be active in chemistry, and have since partially dismantled my laboratory, owning to my mother's nervousness at having deadly poisons, corrosive acids, and potential explosives about the place. One tangible memorial of my hobby remains – a bulky manuscript entitled "A Brief Course in Inorganic Chemistry," by H. P. Lovecraft, 1910. There is also a physical memorial – the third finger of my right hand – whose palm is permanently scarred by a mighty phosphorus burn sustained in 1907. At the time, the loss of the finger seemed likely, but the skill of my uncle – a physician – saved it. It is still a bit stiff and aches in cold weather – as no doubt it always will.

Though Lovecraft's phosphorus burn was acquired during his high-school years, this would not have been his first encounter with this substance if, at age 8, he had indeed performed all of the experiments described in Appleton's *The Young Chemist* (figure 9). But, if so, he had apparently forgotten Appleton's warning that:[7]

Phosphorus is very poisonous and very combustible. It should never be touched with the hands, since dangerous burns are often caused by it.

References and Notes

1. The most comprehensive biographies are L. Sprague de Camp, *Lovecraft: A Biography*, Doubleday: Garden City, NY, 1975, and S. T. Joshi, *I Am Providence: The Life and Times of H. P. Lovecraft*, 2 Vols., Hippocampus Press: New York, NY, 2013.

2. H. P. Lovecraft, *Tales*, Library of America: New York, NY, 2005.

3. H. P. Lovecraft, *Selected Letters, 1911-1924*, Arkham House: Sauk City, WI, 1965, pp. 8, 30-31, 37, 74-75.

4 H. P. Lovecraft, *Selected Letters, 1925-1929*, Arkham House: Sauk City, WI, 1968, p. 109.

5. J. Carrera, *Pictorial Webster's: A Visual Dictionary of Curiosities*, Chronicle Books: San Francisco, CA, 2003.

6. "Appleton, John Howard" in *Historical Catalogue of Brown University, 1764-1904*, Brown University: Providence, RI, 1905, p. 270.

7. J. H. Appleton, *The Young Chemist: A Book of Laboratory Work for Beginners*, Cowperthwaite: Philadelphia, PA, 1878.

8. Appleton would publish about a dozen books in his career, all of them either textbooks related to the teaching of undergraduate chemistry at Brown or popularizations intended for the general public. Perhaps the most successful of these popularizations was H. Appleton, *Beginners' Hand-Book of Chemistry: The Subject Developed By Facts and Principles Drawn Chiefly from the Nonmetals*, Chautauqua Press: New York, NY, 1888 which sported about a half dozen colored lithographs, reproductions of which are currently being sold on the internet.

9. The title page claims the 1878 printing was the second edition. However, no earlier dates appear under either the copyright or the preface. The so-called first edition may well have taken the form of a series of preliminary class handouts, later consolidated in the printed edition.

10. C. A. Russell, *The History of Valency*, Leicester University Press: Leicester, 1971, pp. 106, 234.

11. H. P. Lovecraft, *Selected Letters, 1932-1934*, Arkham House: Sauk City, WI, 1976, pp. 171-173.

12. See Joshi, reference 1, Vol. 1, pp. 100-101.