

SECTION ON HISTORICAL PHARMACY, AMERICAN PHARMACEUTICAL ASSOCIATION

PHARMACEUTICAL EVENTS IN 1816.*

BY OTTO RAUBENHEIMER, PHAR. D.

Although in the excellent chronological summary of the chief chemical events in *A Concise History of Chemistry*, by T. P. Hilditch, a blank space is left behind 1816. I find from my notes, collected for a long time, that the many events of that year in the fields of pharmacy, chemistry and allied sciences are amply sufficient for an historical paper.

The arrangement is the following:

1. Of General Interest.
2. Events, Pharmaceutical, Chemical, etc.
3. Inventions and Discoveries.
4. Bibliography.
5. Pharmacists born in 1816.
6. Pharmacists who died in 1816.

OF GENERAL INTEREST.

National Banks established in the United States.

American Bible Society formed. Centenary celebrated at Carnegie Hall, N. Y. City, May 9, 1916.

Indiana became a State, the 19th State of the Union on December 11, 1816. Centenary celebrated at Bloomington, the seat of Indiana University by historical pageants on May 16-18.

Brooklyn, N. Y., was incorporated as a village, a small village without streets or sidewalks. The first barber moved back to New York and in order to secure another the village authorities offered free rent.

Brooklyn Sunday School Union formed. Local celebration on April 9, 1916. Seasons reversed, summer into winter and winter into summer.

Proclamation of Argentine Independence, commemorated by American Congress of Bibliography and History, July 1916, at Buenos Aires and Tucuman.

Gas installed for lighting in London, England, and also in Baltimore, being the first city in United States with gas illumination.

Great famine 1816-17 in Europe. The chancellor of a German university experimented with wood and published an article on the art of making bread from wood.

John Redmond Coxe, professor at the Medical School, University of Pennsylvania published a paper, "A Plan for Electric Telegraphy," which antedates any American suggestion on this subject.

Agitation commenced in St. Clairsville, Ohio, to abolish slavery.

Abraham Lincoln, 8 years old, and his parents moved from Kentucky to Indiana, crossing the Ohio River in a raft.

* Read before Section on Historical Pharmacy, Atlantic City meeting, 1916.

EVENTS, PHARMACEUTICAL, CHEMICAL, ETC.

1816-20, Thomas Cooper, Professor of Chemistry, University of Pa.

1816-27, John Gorham gets Erving professorship at Harvard.

First lectures on pharmacy in University of Pennsylvania buildings by Dr. James Mease, a well-known medical practitioner and author in Philadelphia. This is said to be the first attempt of systematic instruction in pharmacy, public or private.

Judge Thomas Cooper, Philadelphia, advertised "A Course of Chymical Lectures to be given in the old Masonick Hall in Filbert Street on Tuesday, Wednesday and Friday evenings of each week at 7 o'clock. Tickets \$15 for the course."

Cultivation of peppermint started in Wayne County, Mich.

Pierre Louis Dulong, after losing an eye and sustaining severe injuries to a hand in the discovery of nitrogen chloride in 1811, began work on the oxides of nitrogen. He also studied oxalic and other organic acids and showed that water is an essential constituent.

1812-1816, Berzelius investigated the stages of oxidation of most of the metals, and by determining the composition of these oxides, confirmed the law of multiple proportions.

Laplace established Theory of Velocity of Sound.

INVENTIONS AND DISCOVERIES.

Renné Laennec, physician at the Necker Hospital, Paris, in examining a patient's heart constructed the first *Stethoscope* by rolling a quire of paper into a cylinder and applying one end to the region of the heart and the other to the ear.

Robert Hare, later (1818) professor of chemistry, University of Pennsylvania, invented the Calorimotor.

Alexander Marcet of London, isolated from urinary calculi, in 1816, xanthine, which later was investigated by Woehler, Liebig and Strecker.

Alois Senefelder, the inventor of lithography, made for his own use pens from steel watch-springs. In 1816, he sold his invention to J. Alexander of Birmingham, who started the manufacture of steel pens. At first they were a luxury but about 1830 they came into extensive universal use.

Friedrich Wilhelm Adam Sertuerner, the apothecary at Einbeck, Germany, after announcing in his first report in 1806 the discovery of "Opium-Säure," names this product in 1816 "Meconic Acid" and explains that it is combined with an alkaline base which he called "Morphium." This discovery was made in 1816, but the report was first printed in *Gilbert's Annalen der Physik*, 1817, p. 56. For this reason, there is frequent confusion between the date 1816 and 1817. This subject is of such great importance to pharmacists that it deserves a separate paper.

BIBLIOGRAPHY.

Annales de Chimie et de Physique, edited by Gay-Lussac and Arago, became the successor of Gay-Lussac's *Annales de Chimie*, in which the great chemist published most of his experiments.

Traite de Chimie Elementaire Theorique et Pratique, a text-book by Louis J. Thenard, professor at the École Polytechnique and in the College de France. The publication was commenced in 1813 and completed in 1816. Owing to its

excellent synoptical arrangement the work became widely used and was translated into German by Fechner in 1825-33. This work remained the standard authority in chemistry for over a quarter of a century.

Conspectus of the Pharmacopoeias of London, Edinburgh and Dublin was published in 1816 by Dr. Anthony Todd Thompson, an eminent Scotch physician. Born in Edinburgh in 1778, he studied medicine and chemistry under the celebrated Monroe and Blake. After practicing medicine in London, he devoted himself to chemistry and pharmacy.

Pharmacopoeia of New York Hospital was published in 1816, and enjoyed for some years (until U. S. P. became well known) an authority of more than local character. The physicians and surgeons of the New York Hospital appointed, in 1815, Dr. Valentine Seaman and Dr. Samuel Mitchel to prepare this Pharmacopoeia for their use. The latter was elected President of the first U. S. P. Convention held in the Capitol at Washington, January 1, 1820.

BORN IN 1816.

Dr. Hans Hermann Julius Hager (1816-1897), generally and simply called Hermann Hager, I place at the head of this list, as in scientific pharmacy he is the brightest star in the heaven of the profession. Having written his biography in the *Druggists Circular*, January 1916, *Deutsch-Amerikanische Apotheker Zeitung*, January 1916, and the *Bulletin of the College of Jersey City*, Vol. III, No. 3, February 1916, I will not repeat same, as these publications are easily available. However, I want to call attention that Hager has also been honored in our country by being elected an honorary member of the A. Ph. A. in 1868, the Chicago College of Pharmacy in 1869, the Massachusetts College of Pharmacy in 1871, the New Yorker Deutscher Apotheker Verein in 1872, and the Philadelphia College of Pharmacy in 1883. The German Apothecaries Society of New York City has presented each one of these societies and colleges a large photograph of Hager to be an inspiration to the younger generation of pharmacists.

LALLEMAND.

Seemingly forgotten is Alexander Lallemand, a French pharmacist, born in Toulouse in 1816, as but very little information can be obtained even after a diligent search. His principal work was done on volatile oils. He determined the saponification value of oil of spike lavender and also the chemical composition of the stearopten in oil of rosemary as laurel and borneo camphor.

In Gildemeister-Hoffman-Kremers excellent *The Volatile Oils*, I find under Oil of Thyme the following paragraph: "Thyme Camphor was examined by Lallemand in 1853,¹ who named it Thymol."

Lallemand died in 1886 and pharmacists should remember him in connection with Thymol!

BÉCHAMP.

Antoine (J. A.) Béchamp was born October 16, 1816, in Bassing, near Dieuze (Meurthe) and conducted a pharmacy in Strassburg for many years. He began his scientific career by becoming Agrege at the École de Pharmacie in Strassburg. In 1853 he obtained the degree D.Sc. and in 1856 that of M.D. with a thesis *Sur*

¹ *Journ. Ph. et. Chim.*, III, vol. 24 (1853), 274 and *Compt. rend.*, vol. 37 (1853), 498.

les substances albuminoïdes et pur leur transformation en urée. Béchamp became professor of medical chemistry and pharmacy at the University of Montpellier and later of Nancy.

Among his many chemical researches, I will mention the following:

Investigation of the fruits of *Gingka biloba*, finding valeric, propionic and capronic acids.

Lessons sur la fermentation vineuse et sur la fabrication du vin, published in 1863, discovering at the same time a dextrogyrate gum in wine.

Reduction of NO_2 to NH_2 forming amides, by means of iron and acetic acid.

Preparation of para-amido-phenyl-arsenic acid.

Investigation of ptomaine-veratrine.

Chlorination process with PCl_3 in 1856.¹

Last of all we must not forget his *Lettres historiques sur la chimie*, published in 1876.

GERHARDT.

Charles Frederick Gerhardt was born in Strassburg in 1816, the son of German parents. He studied under Erdmann and Liebig. Among his many accomplishments in organic chemistry, I want to mention the following: Theory of Residues in 1839; Atomic Weight System in 1842; Homologous Series in 1844 and Theory of Four Types in 1853. Much of this theoretical work was done together with Antoine Laurent and is preserved in *Comptes rendus des Travaux de la Chimie Organique*, which was published in 1853.

Gerhardt also enriched chemistry with the following discoveries: Quinoline in 1842; the Anilides in 1845; Acid Chlorides from POCl_3 in 1851 and Acid Anhydrides in 1852. He wrote *Traité de Chimie Organique*, which was published in 1853.

From 1844-48 he was professor of chemistry at Montpellier, as the successor of Antoine Jerome Balard, the discoverer of bromine. In 1849 he opened a school of chemistry at Paris, which, however, was not a success commercially. In 1855 he was called to fill the chair of chemistry in the Faculty of Sciences at Strassburg where he died on August 19, 1859.

In 1844 he obtained the degree of *Maitre en Pharmacie* and he will be forever remembered in pharmacy as his medallion, the 28th among the 36, adorns the façade of the *École Supérieure de Pharmacie* in Paris.

RIEDEL.

Gustav Riedel was the oldest son of Johann Daniel Riedel, the founder of the firm J. D. Riedel, Berlin, which has a world-wide reputation. Gustav learned pharmacy under such authorities as Emanuel Merck, the founder of the firm E. Merck, in the Engel-Apotheke at Darmstadt. Upon the death of his father on Feb. 11, 1843, he succeeded him, and through his energy the retail and wholesale business was enlarged. In March 1844, he published a printed price list with 570 preparations in 1847 and equipped his laboratories with steam power, and in 1874 he separated the retail pharmacy from the wholesale drug business.

Gustav Riedel is a splendid example of how energy can enlarge a business,

¹ *Compt. rend.*, vol. 40, 944.

even in pharmacy. The firm J. D. Riedel celebrated its 100th anniversary on March 15, 1914.

OROSI.

Every country has its celebrated pharmacists and Orosi is one of them in Italy. Guisepe Orosi was born in Pisa on March 17, 1816, of poor parentage. After his father's death he became an apprentice in the pharmacy of his native city. He studied day and night and managed to save 100 liras, the examination fee. Upon passing a most excellent examination, he clerked at Livorno at a salary of 16 lire and 80 cent per month and continued his pharmaceutical studies. He became pharmacist in the Livorno Hospital and also gave a course of lectures on pharmacy and chemistry to students.

Orosi succeeded Prof. Piria at the chemical laboratory Corridi, and later established the laboratory Contessini-Orosi, whose pharmaceutical and chemical products became famous.

In 1849 Orosi was made professor at Florence, but on account of his patriotism was removed by Leopold II, Archduke of Toscana. In 1859 the Provisional Government reinstated him in his position and later he accepted the chair of agricultural and pharmaceutical chemistry at the old University of Pisa. Here he lived a happy life among his colleagues, his family and his pharmaceutical friends and died on December 14, 1875.

The literary activities of Orosi began in 1842 when he translated Dumas' *Lezion di Filosofia Chimica*. His master work is his *Farmacologia Theorica et Pratica—Farmacopea Italiana*, the 1st ed. being published in 1849 in Livorno. This excellent work of 1686 pages had 4 editions, the last of which, Milano, 1876, I am proud to have in my library. One page of this book is also devoted to a bibliography of Orosi's works.

Orosi's *Farmacopoea Italiana* is really a dispensatory and similar to Dorvault's *L'Officine*. It must not be confused with the Italian Pharmacopoeia or *Farmacopea Officiale de Regno d'Italia*, the first edition of which was published in 1892.

Many of Orosi's students obtained fame, for instance Torquato Gigli, professor of chemistry and toxicology at the University of Pavia, who translated Flueckiger's *Pharmazeutische Chemie*.

Orosi has also been honored as an Italian pharmaceutical journal *L'Orosi* was established in 1877.

DIED IN 1816.

MORVEAU.

Guyton de Morveau, born in Dijon in 1737, began life as a lawyer or *avocat*, but gave up this career to devote himself entirely to chemistry. To him belongs the credit of introducing in 1782 the first rational system of chemical nomenclature, thus replacing the unmeaning names and confusing synonyms. As a result he, together with Lavoisier, Berthollet and Fourcroy, published *Methode de Nomenclature Chimique*.

He was one of the founders of the *École Polytechnique* at Paris, in which he subsequently became professor. He also occupied the position as Director of the

Mint. By translating the works of Bergman, Scheele and Black he helped to spread the knowledge of chemistry.

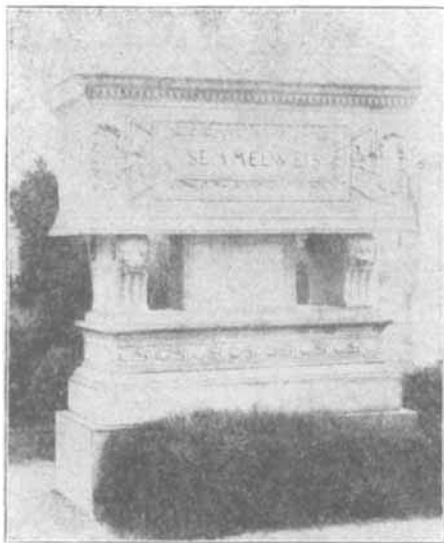
Morveau introduced the process of manufacturing Sal Soda by heating Glauber's Salt with coke and iron. To him we owe the name *Alumina* for Al_2O_3 , which was formerly called Argile (therefore, the term argillaceous earth for clay) by Claude Joseph Geoffroy, Jr.

Morveau, who was also an influential member of the National Assembly and the Convention, died in Paris in 1816.

CRELL.

Lorenz von Crell was born in Helmstedt in 1744, where he became professor of medicine. Science is deeply indebted to him for the publication of several journals. In 1778 he founded the *Chemisches Journal fuer Freunde der Naturlehre, etc.*, which in 1784 became the *Chemische Annalen* and in 1803 was fused with *Allgemeines Journal der Chemie*. These represent the starting point of the extensive German chemical literature. Crell died in Goettingen in 1816.

DEPARTMENT OF PHARMACY, COLLEGE OF JERSEY CITY.



Monument erected over the grave of Dr. Ignaz Philipp Semmelweis by the city of Budapest.



PROF. ROBERT HARE
Inventor of Calorimotor, 1816.