manifestly impossible within the limits of such a paper as this. A proper presentation with its elaborate detail of facts, however interesting, would become wearisome to the listener before a tithe of the pages such a history would fill could be read. It is, therefore, with much regret that leaving unwritten a complete history of the thirty-one years of its career of usefulness, embracing the names of many of those eminent and loved in our profession, I submit this fragment of its history to your honorable body, which paper only describes the preliminary steps leading to the foundation of the Massachusetts State Pharmaceutical Association, and to the ultimate success of that work, and leave to time and some abler pen the writing of its fuller history.

SOME IMPORTANT DATES IN PHARMACAL CHRONOLOGY SINCE 1700.

J. F. LLEWELLYN, MEXICO, MO.

1700. Franklin sold drugs for ten years.
1700. Kew Garden began on 11 acres, now 270 acres.
1702. Amonton calculated absolute zero —240, and expressed the opinion that air could be frozen solid.
1711. First patent medicine in U. S. *"Tuscora Rice"* to cure consumption.
1713. Erection of the first "Anatomical Theater" in Berlin by King Frederick Wilhelm I.
1716. Apothecaries of Boston cut price of bleeding to sixpence.
1728. John Bartram established near Philadelphia the first botanical garden in U. S.
1740. Hellott distilled anilin from indigo.
1743. Lavoisier born (1743-1794).
1760. Haller injected aqueous extract of putrid matter and found that death resulted (1708-1777).
1766. Hydrogen discovered by Cavendish.
1747. Marggraf, an apothecary, discovered magnesia and alumina and showed identity of cane and beet sugar. He is the "Father" of Industrial Chemistry.
1771. Linneaus knew 8551 species of plants (1707-1778).
1750-1790. Period of Black, Cavendish, Watt, Priestly, Davy, Bergman, Scheele, Lavoisier.
1759. Braun at Moscow froze mercury.
1765. First medical school in U. S. established at Philadelphia.
1772-83. Scheele discovered manganese, chlorine, baryta, arsenite of copper, molybdenum, uric, lactic, mucic, gallic, oxalic, hydrocyanic and malic acids, and glycerin.
1772. Rutherford isolated nitrogen.
1774. Oxygen discovered by Priestly.
1776. Apothecary General for revolutionary army created, re-enacted 1789, abolished 1802, revived 1812, abolished 1822.

1777. Oersted born, son of a pharmacist, apprenticed to his father 1789; 1813 published "Researches on the Identity of Chemical and Electric Forces" (1777-1851).
1777. Wenzel of Saxony found first principles of chemical equivalents; 1789 Higgins of Dublin added to this and suggested atomic theory, and claimed priority 1814.
1778. First American pharmacopoeia published.
1772. Richter's first work on combination published.
1785. Schoepf's Materia Medica Americana published.
1794. Priestly arrived in America.
1794. First Irish pharmacopoeia published.
1796. Jenner's first vaccination.
1795. Trommersdorf established at Erfurt a chemico-pharmacal institute; instructions given in logic, mathematics, physics, botany, zoology, mineralogy, chemistry and pharmacy. This school, together with the influence of its founder, raised the practice of pharmacy to the dignity of a profession in Germany.
1798. Barton's Collection for a Vegetable Materia Medica, part first, published.
1799. Nux vomica official in Pharmacopoeia Borussia.
1800. Dumas born; he was apothecary, chemist, diplomat, and perpetual secretary of the French Academy of Science (1800-1884).
1800. Nitrous oxide studied by Davy.
1800. Volta made electric chemistry possible.
1801. Hare invented the ox-hydrogen blowpipe.
1802. Drug store established at Poughkeepsie, N. Y.; now in existence.
1803. Dalton announced his atomic theory.
1803. Liebig born; was ten months in an apothecary shop (1803-1873).
1804. Seguin found a crystaline substance in opium.
1805. Peter Wolfe, last of the alchemists, died in London.
1805. Morphine found by the German apothecary Sertürner.
1807-08. Potassium, sodium, strontium, calcium, boron and magnesium isolated as elements by Davy.
1807. Person recognized 20,000 species of plants.
1808. Gay-Lussac researches on gases.
1808. Pharmacopoeia of Massachusetts Medical Society published.
1809. De Candolle recognized 30,000 species of plants.
1809. Charles Darwin born (1809-1882).
1810. Asa Gray born (1810-1888).
1811-40. Berzelius perfected atomic theory.
1811. Iodine discovered by Courtois.
1812. Davy published "Elements of Chemical Philosophy."
1813. Elementary nature of iodine discovered by Davy and Gay-Lussac.
1815. Act of parliament requiring examination and license for apothecaries, which first recognized apothecaries as legitimate practitioners. In 1819 first conviction under this act.
1818. Faraday suggested use of ether as an anesthetic.

1818. Ultramarine blue made accidentally. In 1828 it was an article of commerce, price $2.66 a pound.
1818. Hydrogen peroxide discovered by Thenard.
1820-30. Achromatic and aplanactic microscope perfected.
1820. Quinine discovered by Pelletier and Caventon.
1820. First U. S. Pharmacopoeia published in Latin and English.
1820. A pure food stir in London. Alum in bread scare.
1821. First College of Pharmacy in U. S. founded in Philadelphia.
1822. Gauze over windows and sleeping under nets found to lessen attack of malaria.
1823. Faraday liquified chlorine.
1826. Balard, a French pharmacist, discovered bromine.
1826. Wöhler first obtained aluminum.
1828. Wöhler's synthesis of Urea.
1830. Nux vomica official in U. S. P.
1831. John M. Maisch born (1831-1893).
1831. Liebig, Soubeirane and Guthrie discovered chloroform.
1832. First drug store in Chicago.
1832. Runge obtained anilin from coal tar; 1834 phenol; 1837 anilin colors.
1835. Thielen produced liquid carbonic acid.
1837. Bunsen began work on cacodyl compounds; cacodyl cyanide 1845.
1839. Schönbein discovered ozone.
1840. Liebig published "Organic Chemistry as Applied to Agriculture;" 1842 "Animal Chemistry."
1840. London Society of Apothecaries increased studies of candidates, specifying course of lectures and number of lectures; example followed by the College of Surgeons.
1840. Crum Brown first used term valency.
1840. Hoffman and Fritsche prepared anilin.
1841. Pharmaceutical Society of Great Britain founded.
1841-2. Charles Jackson showed that ether made surgery painless.
1842. Dr. Long, of Georgia, performed the first surgical operation with ether.
1842. A Roman "patent-medicine die" found in Ireland, probably used 100 B. C.
1844. Ibsen six years an apothecary.
1844. Dr. C. W. Wells used nitrous oxide in extracting teeth.
1848. Danielssen used thermometer in fevers.
1848. Lord Kelvin (then Wm. Thompson) calculated absolute zero —273.
1848. Joule calculated the mechanical equivalent of heat.
1849. Wurtz and Hoffman discovered ethyl, methyl and phenyl compounds, calling them ammonia type compounds.
1851. Corti used stains in microscopic work; Welker and Osborne in 1856; Gundlach in 1858.
1851. Goodyear combined sulphur and india rubber.
1851. American Pharmaceutical Association founded.
1853-4. Pichon used electric arc for smelting.
1855. Bunsen burner invented.
1856. Perkins made mauve anilin dye.

1856. Panum isolated putrid poison and found it compared in toxicity with snake venom.
1857. Pasteur shows that lower organism caused putrefaction.
1857. Livingstone just missed discovering relation between mosquitoes and malaria.
1858. Shaws garden established. In 1913 has 700,000 specimens.
1858. Austin Goodyear Day made hard rubber.
1859. Gun Cotton discovered by Seimens and Schonbein.
1864-69. Newlands, Meyer and Mendeleef discovered periodicity of elements.
1865. Pasteur began his work in Bacteriology.
1865. Kekulé's "Benzol Ring" theory announced.
1866. Jones and Dupre obtained from liver animal chinoidine.
1867. Lister used phenol as an antiseptic.
1868. Bergam and Schmeidaberg obtained from putrid yeast and blood "Sulphate Sepsin," 0.01 gramme injected killed a dog.
1869. Hyatt made celluloid.
1870. Selmi suggested name Ptomaine and did work of great value in study of Ptomaines.
1870. Cheseborough made vaseline.
1872. Scheffer improved process for making pepsin (1821-1874).
1874. Wm. Procter, Jr., died (1817-1874).
1876. Nenki made the first ultimate analysis and determined the formula of a ptomaine.
1879. Saccharin made by Fahlberg at Johns Hopkins University.
1879. Castner process for Aluminum.
1880. Lavernon found malarial parasites in blood of patients; confirmed by Sternberg 1886.
1881. Dr. Carlos Finlay suggested transmission of yellow fever by mosquitoes. Cingalese writers, sixth century, mentioned 67 varieties of mosquitoes, and that four varieties of fever were caused by the bite of mosquitoes.
1883. Wroblowski liquified oxygen.
1883. Eighty-three pounds of Aluminum produced.
1884. 281,000 pounds of Bromine made in U. S.
1884-5. New York and Brooklyn Formulary published.
1885. Wroblowski and Olzewski liquified aid and hydrogen.
1886. Fluorine isolated by Moisson.
1888. National Formulary published by the A. Ph. A.
1893. Cryoscopy used to study Benzene series.
1894. Manson suggested that mosquitoes served as intermediate host for malarial parasite, confirmed by Manson and Ross, 1900.
1895. Roentgen Rays discovered.
1895. Linde invented Liquid Air apparatus.
1896. Phila College of Pharmacy celebrated 75th anniversary; one member of the first class then still living.
1898. Dewar liquified hydrogen; claim of 1885 thought to be an error
1898. Tripler made commercial liquid air.
1898. Radium discovered by M. and Madame Curie.
1898. Demonstrated that mosquitoes cause malarial fever.

1900. Brassuer and Sampole produced color photographs.
1900-01. Dr. Reed demonstrated that yellow fever is conveyed by mosquitoes. Mary Kingsley medal awarded to Dr. Carlos Finlay, 1907.
1900. Defaur made pyrometer with quartz bulb and tin as the liquid, Muschenbrock, 1730, used a metal bar; Wedgwood used clay 1788; Siemens electricity, 1871.
1906. Pure Food and Drugs' Act in United States, June 30.
1907. Beltwood's theory that lead is the final decay in the Uranium series, twenty-six elements from Uranium to lead.
1909. Willstaetter obtained crystallized chlorophyll.
1910. Tenth International Congress of Pharmacy at Brussels.
1912. Journal A. Ph. A. first published.
1912. Eighth International Congress of Applied Chemistry, Washington, D. C., and New York City, with a Section on Pharmaceutical Chemistry, well attended by pharmacists and chemists of all nations.
1913. Sixty-first Annual Convention A. Ph. A. at Nashville, Tenn.

JOHN KING, M. D.*

JOHN URI LLOYD, CINCINNATI.

Born in New York City, January 1, 1813; died in North Bend (a suburb of Cincinnati), Ohio, June 19, 1893.

Early Life. The father of Dr. John King was an officer in the New York Customs House. His mother was a daughter of the Marquis La Porte, who came from France with the Marquis de Lafayette, to aid the colonists in their struggle for independence. His parents were in comfortable circumstances, and gave their son a liberal education, intending that he should enter mercantile life.

The trend of his disposition, however, was towards the professions and sciences, he being apt in mathematics and proficient in languages. At the age of nineteen, five languages were at his command, and until near the date of his death, he delighted in German and French literature, the latter being with him a special favorite. At that date French was preeminently the language of science, and to King it was a pleasure to read the current scientific literature, translating therefrom for the medical press of this country, a habit he retained with the methodical habits of his early life, even to a ripe old age.

Immediately after leaving college, he learned the art of engraving bank notes, and ever afterward his hand writing was as smooth and uniform as a page of copper plate. Every page of his numerous publications, including his great American Dispensatory, was written in his own hand, and every word was faultless, every letter distinct, every punctuation mark carefully selected, every sen-

*This brief biography is compiled, largely, from an article by this writer, published in the *Western Druggist*, December, 1893, and reprinted in the *Eclectic Medical Journal, Cincinnati*, January and February, 1894. The writer regrets that space does not now permit of a more extended paper on the life of this remarkable man, a subject of absorbing interest. But those desiring greater details will find them in the admirable work of Professor Harvey Wickes Felter, M. D., in *Bulletin No.* 10 (*Pharmacy Series No.* 5), of the Lloyd Library of Botany, Pharmacy and Materia Medica. In this is also presented an admirable frontispiece engraving of the man whose work is herein described.