

EMINENT AMERICAN PHARMACOGNOSISTS OF THE
NINETEENTH CENTURY.*

BY HEBER W. YOUNGKEN.

In approaching this topic I am at once confronted with the problem of scope. Shall I record in this humble historical effort the life and work of all of the pharmacognosists who have risen to eminence in America and whose earthly activities began during the Nineteenth Century or shall I limit the field of my theme to those of that distinguished number whose labors have ended but whose souls abide with us? I have chosen the latter course as more appropriate at this time, being duly mindful of the outstanding work and worth of the others who are still living but whose labors for the advancement of science have not ceased.



JOHN M. MAISCH.

JOHN M. MAISCH (1831-1893).

The pioneer in American pharmacognosy was undoubtedly John Michael Maisch, son of a German merchant, who was born at Hanau on the Main on January 30, 1831. After a brief period of education in a private school and later in a city school, he determined to enter the jewelry business when a little more than twelve years of age. While pursuing his apprenticeship he took instruction in the Realschule and Oberrealschule and soon evinced interest in botany, zoölogy and theology. He early conceived the idea of the union of religion and science and was encouraged to prepare for the university by his teachers. During this preparation he took chemistry under Professor Bromeis and became so interested in the

natural sciences that he gave up the idea of the ministry. He had so overexerted himself through the study of the dead languages and other preparatory subjects that his health failed and his university plans were abandoned.

In 1849 Maisch came to America. He was almost penniless when he arrived in Baltimore and, in order to supply the necessaries of life, obtained work for about six months in a paper box factory. While there he met a Dr. Wiss who, in 1850, opened a drug store and hired young Maisch as his assistant. Maisch was very ambitious and eagerly sought instruction from Dr. Wiss and Dr. Vogler, making constant use of Dr. Wiss' pharmaceutical books during his spare time. The store was sold in 1851 and young Maisch obtained work in another drug store in Washington until 1853. From 1853-1855 he worked in drug stores in Philadelphia and New York and in a chemical establishment in Brooklyn.

In 1856 he returned to Philadelphia to accept employment as clerk for E. B.

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Garrigues and Robert Shoemaker and Company, positions he held until 1859. He then was called to teach in Professor Parrish's School of Pharmacy at 8th and Arch Streets.

In 1861 he accepted the call to the chair of Pharmacy and Materia Medica in the College of Pharmacy of the City of New York which he occupied for two years, working during his spare time in the laboratory of E. R. Squibb.

The Civil War was on and Maisch was called in 1863 to organize and conduct the United States Army Laboratory at Philadelphia becoming director thereof until the end of the war.

After the close of the war he conducted a drug store at 1607 Ridge Avenue, Philadelphia, until 1871 when he sold it to give his entire time to teaching and the secretaryship of the AMERICAN PHARMACEUTICAL ASSOCIATION.

In 1866, Professor Maisch was elected to the chair of Pharmacy at the Philadelphia College of Pharmacy, succeeding William Procter, Jr. The following year he exchanged chairs with Professor Parrish by mutual consent and the title of the chair was changed to Materia Medica and Botany. This chair Maisch retained for 26 years, or until the time of his death. As a teacher he impressed his strong personality upon all whose fortune it was to sit at his feet.

Professor Maisch was a prolific writer, a persistent observer and a careful investigator. He was the first American pharmacognosist to recognize the value of the microscope in the study of drugs and adulterants. His hobby was peculiarly that of a searcher after adulterants. As early as 1854 he wrote an article for the *American Journal of Pharmacy* entitled "On the Adulteration of Drugs and Chemical Preparations." Realizing the need of a microscope in his investigations he induced the college to procure one. This arrived in 1861 and Maisch is said to have employed it constantly in his work.

Among his papers bearing upon pharmacognosy were the following: "On *Chelidonium majus*," "African Saffron," "Lycopodium clavatum," "Matico," "Purity of Commercial Spanish Saffron," "On the Adulteration of Volatile Oils," "Sneezeweed," "On the Active Principles of *Rhus Toxicodendron*," "Maize as a Sugar Producer," "Maize Oil" and "On the Tubers of *Dioscorea* sp."

From 1870 until his death Maisch was editor of the *American Journal of Pharmacy*. He was co-editor with Dr. Alfred Stille of the "National Dispensatory" and revised or assisted in the revision of a number of text and reference works including the third edition of "A Universal Formulary" by R. Eglesfeld Griffith, M.D. (1874).

In 1882 the first edition of his "Organic Materia Medica" appeared. This text which passed through five editions became the outstanding standard in its field for several generations.

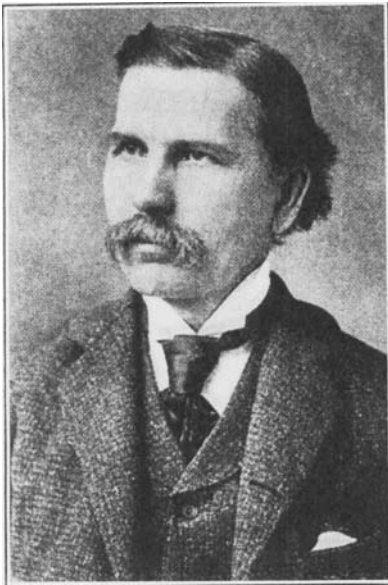
Maisch died of a malignant growth on September 10, 1893, only a short time after being the first American recipient of the Hanbury Medal for distinguished services and for original research in the natural history and chemistry of drugs.

He has rightly been called one of the master minds of American Pharmacy and he can well be ranked as one of the most industrious and versatile of workers in the field of international pharmacognosy.

EDSON S. BASTIN (1843-1897).

Edson Sewell Bastin was born in Ozaukee County, Wisconsin, on May 29, 1843. His boyhood was spent on a farm where he was obliged to work in the summer and attended the district school in the winter. His parents died before he had reached his teens which threw him on his own resources.

At the age of sixteen he entered Carroll College and pursued work there for three years. The Civil War had broken out, and in 1862 he enlisted in the 28th regiment of Wisconsin volunteer infantry. Within two years after enlistment he was commissioned Captain of the 4th Arkansas Cavalry. Following the war he was offered a cadetship at West Point, but declined the honor and instead entered Chicago University from which he graduated in 1867. In the Fall of the same year he entered the Theological School of the same University and graduated with the



EDSON S. BASTIN.

B.D. in 1870. He had intended to preach but his great interest in Botany and other natural sciences influenced him to enter Pharmacy as a means to the end. He was United States Marshal in Indian Territory for several years, and in 1874 returned to Chicago to accept the position as registrar of the University of Chicago in which institution he was soon made an Instructor in Botany. In 1876 he was advanced to the Professorship of Botany and Geology and the same year was made a Lecturer on Botany in the Chicago College of Pharmacy.

In 1883 he resigned from the University of Chicago to devote his entire time to the Chicago College of Pharmacy. Here he first established a botanical and microscopical laboratory.

In 1887, he issued his "Elements of Botany" and, in 1889, the second edition of the work appeared under the title of "College Botany." This work was destined to be his greatest masterpiece and was widely adopted in both academic and pharmaceutical colleges. In 1890, Professor Bastin resigned his position at the Chicago College of Pharmacy to accept the chair of Botany and Materia Medica in the Northwestern University School of Pharmacy. Here he started another microscopical laboratory and wrote papers on "The Flora of the South Shore of Lake Michigan," "Starches in Root Drugs," "Contributions on Plant Hairs," "Detection of Stem Admixtures in Root Drugs," "Plant Crystals" and "Notes on Vegetable Histology."

In the Autumn of 1893 he became Professor of Botany and Materia Medica at the Philadelphia College of Pharmacy as successor to Professor Maisch.

Within a year he brought about the establishment of a botanical and microscopical laboratory and published another excellent book, "Laboratory Exercises in Botany." This work contained several hundred original drawings.

During 1895 he published nine illustrated papers on local and medicinal plants.

In 1896, he and Henry Trimble began a series of papers on "The North American Coniferae" which they published in the *American Journal of Pharmacy*. While engaged in preparing a text on pharmacognosy he was stricken with exophthalmic goitre and died as a result of cerebral hemorrhage on April 6, 1897, at the age of 54 years.

Professor Bastin was a staunch advocate of the practical study of the natural sciences. His method was that of studying the plant and drug material in hand, using books only as guides.

JULIUS O. SCHLOTTERBECK (1865-1917).

Julius Otto Schlotterbeck was born of German parentage in Ann Arbor, Michigan, September 1, 1865. He received his early education in the public schools of that city and for several years served an apprenticeship in Moore's drug store. In 1885 he matriculated in the School of Pharmacy of the University of Michigan and graduated therefrom in 1887 with the degree of Pharmaceutical Chemist. Shortly after his graduation he became manager of the Eagle Pharmacy in Pittsburgh, Pa., where he served until the Fall of 1888 when he returned to the University of Michigan to become Assistant Instructor in Pharmacognosy and Pharmacy. While serving in this position he pursued studies in the College of Literature, Science and Art of the University from which he was graduated in 1891 with the degree of B.S. in Chemistry. From 1892 to 1895 he was Instructor in Pharmacognosy and Botany in his *Alma Mater*. From 1895 to 1896 he studied abroad at the University of Berne, specializing in Pharmacognosy under the eminent Tschirch and received his Ph.D. in 1896. His inaugural dissertation was on "The Developmental History of Pharmacognostically Important Seeds."



JULIUS O. SCHLOTTERBECK.

He returned to Ann Arbor in the Fall of the same year and was made Assistant Professor of Pharmacognosy. In 1904 he was advanced to Junior Professor and in 1905 to Professor and Dean of the College of Pharmacy. For a time he was consulting expert for Frederick Stearns and Company and for the J. Hungerford Smith Company.

He has been rated as one of the best teachers of pharmacognosy in the United States. Many of his pupils have attested to his ability, loyalty, faith and vision as his outstanding characters; he lived these and inspired others to live them.

He was a member of many scientific associations, secretary of the American Conference of Pharmaceutical Faculties 1904-1908 and its president from 1910-1912. He was a member of the Committee on Revision of the United States Pharma-

copœia of 1900, and chairman of the Scientific Section of the AMERICAN PHARMACEUTICAL ASSOCIATION from 1902-1903.

Dr. Schlotterbeck was a brilliant investigator in the fields of pharmacognosy and phytochemistry. He received two Ebert Prizes for outstanding work in the sciences. Among his original contributions are included the following: "Notes on the Behavior of Albuminate of Iron and Ferratin with Artificial Gastric Juice" (with S. R. Boyce), "Analysis of Kola" (with J. W. T. Knox), "Comparative Structure of the Leaves of *Datura Stramonium*, *Atropa Belladonna* and *Hyoscyamus Niger*" (with A. Van Zwaluwenburg), "Clove Bark" (with A. Van Zwaluwenburg), "Developmental History of Important Seeds: Cotton Seed and Cacao Seed" (with A. Van Zwaluwenburg), "The Alkaloids of *Bocconia Cordata* and the Assay of *Sanguinaria* and Its Preparations" (with Paul Murrill), "The Nature of Commercial *Sanguinarine Nitrate*, *Adlumia Cirrhosa*: A New Protopine Bearing Plant," "The Structure and Development of the Fruit of *Illicium Floridanum*" (with C. R. Eckler), "Contribution to the Chemistry of *Stylophorum Diphyllum*" (with H. C. Watkins), "Does *Argemone Mexicana* Contain Morphine?" "The Development and Structure of the Seed of *Stylophorum Diphyllum* and *Chelidonium Majus*," "The Alkaloids of *Adlumia Cirrhosa*" (with H. C. Watkins), two papers on "Contribution to the Chemistry of *Chelidonine*" (with Watkins and Knapp, respectively), "Contribution to the Chemistry of *Bocconia Cordata*" (with W. H. Blome), "The Development and Structure of the Seed of *Argemone Mexicana*" and "Vanilla Extract" (with J. R. Dean).

Dr. Schlotterbeck was devoted to his wife and family of two boys and one girl, and was delightful company according to many of his friends. He loved music and played the piano well. He also had a fine sense of humor and possessed that rare gift of being able to tell a story well. Due to his German parentage and early training, he spoke German fluently which proved invaluable to him while studying for the doctor's degree at Berne under Tschirch.

In September 1916, while attending a meeting in New York, he was taken ill. Two periods in the hospital failed to help him and he died of a lingering illness at his home in Ann Arbor, June 1, 1917.

(To be concluded.)

NEW ZEALAND PHARMACEUTICAL CONFERENCE.

Pharmacists from all States and New Zealand met in Melbourne to attend the biennial meeting of the Pharmaceutical Association of Australia and New Zealand.

A varied program of work and entertainment was provided. Commencing with the meeting of the Sciences Association, pharmacy is represented by Section "O" (Pharmaceutical Science), and at the various sessions some valuable contributions of a scientific nature were made. A full session was devoted to "The Expanding Pharmaceutical Curriculum." Dr. Roy Gardner, F. I. C., of New Zealand, presided at the Section "O" meetings, and as the official guest of the Pharmaceutical Society of Victoria;

A. R. Penfold, of the Sydney Technological Museum, whose work on the *Eucalyptus* is well known, read two special papers on the subject. Other leading pharmaceutical authorities presented communications that were interesting and instructive.

Following on the Section "O" sessions, the Pharmaceutical Association held its sessions. The Association is the clearing house of Australasian pharmacy. Embracing as it does representatives of all the pharmaceutical bodies in New Zealand and all the Australian States, it focuses attention on national problems, and shapes the pharmaceutical policy for the ensuing two years. A conference of Pharmacy Boards was held after the meeting of the Association.