IN MEMORIAM.

PROF. J. LAWRENCE SMITH.

A BIOGRAPHICAL SKETCH

OF

PROF. J. LAWRENCE SMITH.

BY

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PREFACE.

This brief biographical sketch of Professor J. LAWRENCE SMITH was prepared by request, for the American Academy of Arts and Sciences of Boston. In deference to the expressed wishes of friends of the deceased I have had a few copies printed for private distribution.

J. B. MARVIN.

FEBRUARY, 1884.

PROF. J. LAWRENCE SMITH.

J. Lawrence Smith was born near Charleston, S. C., December 17, 1818. At an early age he manifested great taste for mathematics; when four years old he could do sums in addition and multiplication with great rapidity. This was some time before he could read. At eight years of age he was prepared for the study of algebra, and at thirteen years was studying calculus. His knowledge and taste for mathematics continued throughout life. He pursued his studies in the best private schools of Charleston; afterward he was sent to the University of Virginia, where he enjoyed facilities for the indulgence of his taste for mathematics. In the latter part of his academic career he devoted himself to the higher branches of physics, mixed mathematics, and chemistry, studying the latter rather as a recreation. He selected civil engineering as a profession, and after devoting two years to the study of its various branches in connection with geology

and mining engineering, he was employed as an assistant engineer on the railroad projected at that time between Cincinnati and Charleston. This pursuit not proving congenial with his scientific tastes, he determined to study medicine. After studying three years, he was graduated Doctor in Medicine by the Charleston Medical College, an institution possessing at that time a corps of distinguished medical teachers. Dr. Smith then went to Europe, where he devoted three more years to the study of medicine. During all this time he continued his devotion to those departments which first enlisted his scientific affections. He studied physiology under Flourens and Longet; chemistry under Orfila, Dumas, and Liebig; physics under Pouillet, Desprez, and Becquerel; mineralogy and geology under Elie de Beaumont and Dufrenoy. While in Europe Dr. Smith prosecuted original researches on certain fatty bodies. His paper on Spermaceti, in 1843, at once stamped him as an experimental inquirer. On his return to Charleston in 1844, he commenced the practice of medicine and delivered a course of lectures on toxicology before the students of the Charleston Medical College. He established the Charleston

Medical and Surgical Journal, which proved a success.

But the State needing his services as assayer of the bullion that came into commerce from the gold-fields of Georgia, North and South Carolina, he accepted this duty and relinquished the practice of medicine. He also gave a great deal of attention to agricultural chemistry. The great beds of marl on which the city of Charleston stands early attracted his attention. He first pointed out the large amount of phosphate of lime in these marls, and was one of the first to ascertain the scientific character of this immense agricultural wealth. Dr. Smith also made a valuable and thorough investigation into meteorological conditions, character of soils, and culture affecting the growth of cotton. His report on this subject was so valuable that in 1846 he was appointed by President Buchanan, in response to a request of the Sultan of Turkey, to teach the Turkish agriculturists the proper method of cotton culture in Asia Minor. On arriving in Turkey, Dr. Smith was chagrined to find that an associate on the commission had induced the Turkish Government to undertake the culture of cotton near Constantinople. Unwilling to asso-

ciate his name with an enterprise which he felt satisfied would be a failure—the event justified his judgment—he was on the eve of returning to America, when the Turkish Government tendered him an independent position as mining engineer, with most liberal provisions. He performed the duties of this position for four years with such signal success that the Turkish Government heaped upon him decorations and costly presents. Since 1846 the Turkish Government has continued to receive large revenues from his discoveries of emery, chrome ores, coals, etc. His papers on these subjects, read before learned societies and published in the principal journals of Europe and America, gave him a high position among scientific men. His discovery of emery in Asia Minor destroyed the rapacious monopoly of this article at Naxos, in the Grecian Archipelago, extended its use and greatly reduced its price. His studies on emery and its associate minerals led directly to its discovery in America. In Massachusetts and North Carolina a large industrial product of emery is now carried on. To Dr. Smith justly belongs the credit of having done almost every thing for these com-

mercial enterprises by his successful researches on emery and corundum.

Dr. Smith investigated a great many Turkish resources. His paper on the "Thermal Waters of Asia Minor" is of great scientific value. In 1850 Dr. Smith invented the Inverted Microscope. This instrument, with his ingenious eye-piece micrometer and goniometer, is an important improvement; it is especially valuable in chemical work and culture experiments. This instrument has been unjustly figured and described in some works as Nachet's Chemical Microscope.

After Dr. Smith's return to America, his *Alma Mater*, the University of Virginia, called him to the Chair of Chemistry made vacant by the death of Professor Maupin, in 1852. While discharging the duties of his chair, he, in connection with his assistant, George J. Brush, performed the valuable and much needed work of revising the Chemistry of American Minerals. Having married a daughter of Hon. James Guthrie, of Louisville, Kentucky, Prof. Smith resigned his chair in the University of Virginia, and adopted Louisville as his home. In 1854 he was elected to the Chair of Chemistry in the Medical Depart-

ment of the University of Louisville, made vacant by the resignation of Prof. B. Silliman. He filled this chair with signal success for several years, finally resigning it, devoting his time to scientific research. For a number of years he was president of and had scientific charge of the Louisville Gas Works.

Prof. Smith had a private laboratory, which was one of the most complete and best equipped laboratories in this country. In 1855 he published a valuable Memoir on Meteorites. Since that time he has given special attention to these bodies. His private collection of meteorites was one of the largest in the world, and he was regarded as one of the highest authorities on this subject. Prof. Smith was one of the commissioners of the United States to the Paris Exposition of 1867, and to the Vienna Exposition in 1873. His report on "The Progress and Condition of Several Departments of Industrial Chemistry" was well nigh exhaustive.

In 1873 he issued an interesting work containing the more important of his scientific researches. Since this volume was published he has contributed a large number of valuable papers to various scientific journals. Prof. Smith

was very ingenious in devising new apparatus and methods of analysis. While much of his work was of a practical kind, he yet preferred original research in the less cultivated field. Of late years he was especially interested in the rare elements, and while studying Samarskite he discovered what he thought to be a new element which he named Mosandrum. In 1878 he published an account of his researches on this subject, which attracted much attention among scientists.

In 1879 he was elected Corresponding Member of the Academy of Sciences of the Institute of France, to succeed Sir Charles Lyell. Prof. Smith received honors from the principal scientific bodies of the world. He was a member of the following societies: The American National Academy of Sciences; Membre Correspondant de l'Institut de France (Academie des Sciences); The Chemical Society of Berlin; of the Chemical Society of Paris; of the Chemical Society of London; of the Societe d'Encouragement pour l'Industrie Nationale; of the Imperial Mineralogical Society of St. Petersburg; American Association for the Advancement of Science; British Association for the Advancement of Science;

Polytechnic Society of Kentucky; Corresponding Member of the Boston Society of Natural History; of the American Academy of Arts and Sciences; of the American Philosophical Society; American Bureau of Mines; the Societe des Sciences et des Arts de Hainaut; Royal Society of Gottingen; Chevalier de la Legion d'Honneur; Member of the Order of Nichan Iftahar of Turkey; Member of the Order of Medjidiah of Turkey; Chevalier of the Imperial Order of St. Stanislas, of Russia.

In 1874 he was President of the American Association for the Advancement of Science.

Prof. Smith was a most indefatigable worker; his more important original researches number nearly one hundred, besides numerous addresses, lectures, and communications to secular and scientific papers on various scientific subjects. In 1881, on account of failing health, he ceased active work in the laboratory; but his zest for science was not dulled. As late as June, 1883, he published two valuable papers, namely, "Methods of Analyzing Samarskite," and "Peculiar Concretion occurring in Meteoric Iron." Much of his work of late was not left in a suitable condition for publication, and unfortunately will be

lost to the scientific world. For two or three years Prof. Smith had been in declining health from a chronic affection of the liver; he was seldom confined to his house. On the first of August, 1883, a severe attack of his disease compelled him to go to bed. After an illness of more than two months, characterized by the most patient, uncomplaining endurance, he peacefully and painlessly passed away, Friday, October 12, 1883, at three P. M. In accordance with his request, no eulogy was pronounced, but with a simple burial service his body was placed in the "City of the Dead."

Prof. Smith was of imposing presence and great dignity, strong, manly, self-reliant, pure-hearted, withal one of the most modest, unostentatious of men; a simple, genial Christian gentleman. To those who knew him, or ever felt the charm of his presence, he was scarcely less endeared by his genial virtues than admired for his great powers. In him were united great talents and profound knowledge, with such graces of character as modest unselfishness and the most spotless integrity. His hospitality was unbounded; his love for children great; his courtesy and gallantry to ladies partook of the chivalry of former

ages. He was most generous with his apparatus, and any one manifesting an interest in science was sure of help and encouragement from him. For many years he was a consistent member of the Walnut Street Baptist Church. He was active in every benevolent and charitable work. His charity knew no sect nor creed, but his ear and purse were open to all real suffering. He founded and largely endowed the Baptists' Orphan Home of Louisville, thereby erecting a monument more noble and enduring than marble or brass.

Prof. Smith said, "Life has been very sweet to me. It comforts me.. How I pity those to whom memory brings no pleasure." He had "set his house in order," saying he knew it would be but a short time before Death would claim him; but he was ready to go at any hour or day. He leaves the memory of a pure life and a heart full of "exercised humanity."