

Obituary.

PROF. C. S. SARGENT.

FOR more than half a century the name of Prof. Charles Sprague Sargent, Director of the Arnold Arboretum, Harvard University, has been familiar to all who have interested themselves in the scientific cultivation of trees, and we learn with deep regret that he died on Mar. 22 at his home at Brookline, Jamaica Plain, near Boston, Massachusetts.

Prof. Sargent was a descendant of an old Gloucestershire family and he was born at Boston on April 24, 1841. After graduating at Harvard in 1862, he spent three years in the Federal Army, retiring with the rank of brevet major in 1865. He then spent several years in European travel, and afterwards settled down to botanical study at Harvard, devoting his time very largely to the study of the native trees and shrubs of North America. In 1872 he was appointed Director of the Arnold Arboretum, which was at that time in course of formation in connexion with Harvard University. He was connected with that institution until the day of his death, and it was entirely due to his personality, knowledge, energy, and liberality that the Arnold Arboretum attained the proud position it holds in the scientific world to-day.

In addition to forming a very complete collection of trees and shrubs hardy in this particular locality, Prof. Sargent wrote or edited numerous works on trees and shrubs. His "Silva of North America," published between 1891 and 1902, in fourteen quarto volumes, is a monumental work, and will long remain the standard work on North American trees. His connexion with botanical exploration in China and Japan is well known to dendrologists. In 1892 he undertook a prolonged journey in Japan in order to study the native trees, and the result of his observations became known when he published his "Forest Flora of Japan" in 1894. He afterwards took a prominent part in the organisation of several of Mr. E. H. Wilson's journeys of botanical exploration to China, Japan, and other countries, and he edited "Plantæ-Wilsonianæ," an enumeration of the woody plants collected by Wilson in China during his two previous expeditions, which was published in 1913. In addition to purely botanical knowledge Prof. Sargent also possessed a thorough understanding of the cultural requirements of trees and their disposal for landscape effect. He was always ready to impart his knowledge, and was particularly generous in the distribution of plants to other institutions and individuals in his own and foreign countries.

Prof. Sargent was a constant correspondent with the Royal Botanic Gardens, Kew, and was always ready and anxious to share with Kew any of the interesting plants which were collected through the agency of the Arnold Arboretum in China, Japan, or elsewhere. He paid several visits to Great Britain and always spent much of his time at Kew. In addition he paid visits to see all the more interesting specimens of trees and shrubs

which flourish in Great Britain but may not be hardy in the more severe climate of eastern North America. His death is a great loss to botanical science both in America and in Great Britain, where he had many friends.

It is with great regret that we receive the news of the death of the distinguished French man of science, Daniel Berthelot. The son of Marcelin Berthelot, the centenary of whose birth is being celebrated in the present year, Daniel Berthelot showed much of the originality and width of outlook of his illustrious father. After periods of service at the Sorbonne and the Collège de France, he became professor of physics at the École de Pharmacie, and it was in his laboratory at Meudon that he made most of those discoveries and researches in the fields of pyrometry, temperature scales, gas densities, and the chemical effects of ultra-violet light for which his name will be held in remembrance. The famous characteristic equation which he introduced has become second in importance only to that of Van der Waals, and is more accurate than the latter within its legitimate field of application. Daniel Berthelot laid the foundations of accurate gas thermometry and the physical methods of determining molecular and atomic weights which have closely rivalled, if not even excelled, the most accurate procedure of gravimetric analysis. In the field of chemistry his most notable discovery was probably the production of formaldehyde when a mixture of water vapour and carbon dioxide is exposed to ultra-violet light, and of formamide when carbonic oxide and ammonia are similarly irradiated. These syntheses lie at the foundations of biochemistry.

THE issue of the *Physikalische Zeitschrift* for Feb. 1 contains a notice of the life and work of Prof. Des Coudres of Leipzig, who died on Oct. 8, written by his colleague, Prof. W. Wien. Des Coudres was born on Mar. 13, 1862, at Veckerhagen, near Göttingen, of a family which had left the Spanish Netherlands during the religious wars. He was at school at Cassel until 1881 and then studied in succession at Geneva, Leipzig, and Berlin. He took his doctor's degree under Helmholtz at Berlin in 1887 and in 1889 went back to Leipzig as assistant to Wiedemann. In 1897 he was appointed professor of applied electricity there, but in 1901 went to Würzburg as professor of theoretical physics and in 1903 succeeded Boltzmann at Leipzig. He never married, and was content to live for twenty-three years in his rooms in the attic of the Physical Institute. He was fond of travelling, particularly in warm sunny countries. He is probably best known for his work on the speed of cathode rays.

WE regret to announce the death of Dr. S. W. Richardson, formerly principal and professor of physics at University College, Southampton, on April 10, aged fifty-seven years.