these unfortunate Colonies to secure this first number of the *West Indian Bulletin*, carefully study the array of facts contained therein, and see whether it is not possible to do more for reviving the ancient glories of the islands by personal energy, and the adaptation of modern methods of culture and preparation for the markets of the world, than by any possible benefits that can accrue from abolishing the sugar bounties by France and other countries, or the imposition by us of countervailing duties in favour of our own Colonies. While it is extremely doubtful whether the removal of the bounties would benefit the West Indian sugar planters to any appreciable extent, it seems almost absolutely certain that if they resolutely determined on keeping abreast of the times in management, machinery, selection of plants, &c., instead of being content with what was thought good enough by their fathers and grandfathers before beet-sugar entered into the competition, they would soon see an end to the worst features of that perpetual millstone —the depression in the West Indian sugar industry. As Dr. Morris said in his opening address, "The sugar industry in the smaller islands will never be in a satisfactory condition so long as the processes of crushing the canes and manufacturing the sugar remain as at present." H.

SIR EDWARD FRANKLAND, K.C.B., F.R.S.

NEWS of the death of Sir Edward Frankland will come as a surprise as well as a shock to all his friends, and will be received by the whole scientific world with feelings of the deepest regret.

The end came on Wednesday, August 9, in Norway, where Sir Edward had been in the habit of spending his summer holidays for many years. Born at Churchtown, near Lancaster, on January 18, 1825, he had entered upon his seventy-fifth year, but his upright, spare and active figure until quite recently gave the impression of a much younger man. It was noticeable, however, that he had aged in appearance perceptibly after the death of Lady Frankland (his second wife), which occurred rather suddenly in the spring of the present year.

Frankland received his early education at the Lancaster Grammar School, and subsequently became one of the first science masters at Queenwood College. From Queenwood he proceeded to Germany, and studied chemistry at Marburg and at Giessen. Returning to England he was appointed in 1851 first professor of chemistry at Owens College, Manchester, and there he remained for about seven years till his removal to London in 1857 to take charge of the chemical department in St. Bartholomew's Hospital Medical School. In 1863 he was appointed Fullerian Professor of Chemistry in the Royal Institution, and in 1865 he succeeded Hofmann at the College of Chemistry. The latter chair, which was soon afterwards transferred to the united School of Science and Royal School of Mines at South Kensington, he held till his retirement in 1885. Frankland was for many years a regular attendant at the meetings of the Chemical Society, and was president in 1871–72. His scientific work was rewarded also by honours from many foreign universities and academies, including the Institute of France, of which he was a corresponding member. For the last five years he held the office of Foreign Secretary of the Royal Society, and in 1894 he received the Copley Medal.

Sir Edward received the honour of knighthood in 1897, on the occasion of Her Majesty's Jubilee; but this, strange to say, was conferred, not in recognition of his very eminent services to chemical science, but in his more ordinary professional capacity as water analyst to the Home Department, having been for more than thirty years responsible for the annual reports to the Local Government Board on the quality of the metropolitan water supply.

Frankland's title to fame rests securely upon his important experimental investigations in pure chemistry accomplished chiefly within the twenty years from 1848 to 1868, and upon the impetus which was given to theoretical chemistry by the promulgation of his views concerning the combining capacity, or valency as it is now called, of the elements, which he derived from the results of his experimental work. In the years following 1840 the views of Liebig and of Dumas as to the nature of the carbon compounds, usually spoken of as organic, attracted the attention of the whole chemical world, and efforts were especially directed to the problem of how to isolate the compound radicals which they were supposed to contain in the form of oxide, hydrate, chloride, bromide, iodide and so forth. The radical of common alcohol was naturally one to receive early attention, and to this subject Frankland devoted his earliest efforts. He was successful in 1848 in isolating a substance to which he and all the chemists of that day gave the name *ethyl*, in the belief that it was really the radical of which common alcohol was the hydrate and common ether the oxide, and which was present as the characteristic basis of all the numerous compound ethers or ethereal salts then known. Though in strictness an error, long since corrected by applying the law of Avogadro, was involved in this assumption, the experimental method employed led to the further discovery of the remarkable series of compounds known as organo-metallic, and to the subsequent recognition of the varying power possessed by the metals and metalloids of uniting with alcohol radicals, with the halogens and with oxygen. The recognition of this diversity of combining capacity, and of the fact that each elementary atom possesses a maximum capacity beyond which its power of chemical union is incapable of extending, supplied the basis of the modern doctrine of valency and of all the consequences which follow from the idea of the orderly linking of atoms, afterwards developed by Kekulé into the theory of structure, upon which the whole system of organic chemistry is at the present day established.

At a later period Frankland pursued investigations in the then new and always difficult department of synthetical chemistry. In this he was associated for a time with Mr. B. F. Duppa.

Among others of his researches must be mentioned his experiments on the influence of pressure upon the luminosity of flame. These resulted in a theory of luminosity which for many years divided the favour of chemists and physicists with the older theory of Davy, according to which the luminosity of hydrocarbon flames, at least, is attributed to the presence in the flame of incandescent solid particles. Frankland's theory pointed to the effect of density in the ignited vaporous constituents of luminous flames.

Reference must also be made to the protracted and laborious study of gas and, especially, water supplies, which occupied so many of the later years of his life. Having been appointed a member of the Royal Commission on the Pollution of Rivers and Domestic Water Supply in 1863, he continued henceforward to give close attention to this important subject, and if his analytical methods and his conclusions were not universally adopted, he remained to the end of his life the most eminent authority on the chemical examination of water.

Sir Edward Frankland left several sons and daughters, among whom his eldest son, Dr. Percy Faraday Frankland, F.R.S., professor in the Mason University College, Birmingham, is distinguished as a scientific chemist.

The funeral will take place at Reigate on August 22.

© 1899 Nature Publishing Group