

OBITUARY.

SIR EDWARD FRANKLAND.

WE are again called upon to note the departure of a co-worker and master in our chosen field of science. Eulogy is not necessary. The good he has achieved lives after him, and we would merely note that the researches of Sir Edward Frankland, extending over a period of thirty years, relate to work in pure, applied, and physical chemistry. Those in pure chemistry were conducted at first in the laboratories of Playfair, Bunsen, and Liebig. They include subjects related to each other as follows: the conversion of the cyanogen group into the carboxyl group; the change of the alkyl cyanides to the corresponding organic acids, the saponification of ethyl cyanide was announced by Edward Frankland and Hermann Kolbe when they were fellow assistants in Playfair's laboratory in 1845. Although this reaction was not then pursued beyond the monobasic acids, others applied it successfully in other directions. Then followed the action of metallic potassium upon ethyl cyanide and the polymerization of the latter, the isolation of the organic radicals, and the discovery of the organo-metallic compounds. Of these, which were investigated by Frankland throughout his scientific career, were zinc methyl and zinc ethyl, in the study of which the author remarks: "I had not proceeded far in the investigation of these compounds before the facts brought to light began to impress upon me the existence of a fixity in the maximum combining value or capacity of saturation in the metallic elements which had never before been suspected." The ready introduction of negative chlorine into bodies for a more electropositive constituent is a fact to which we give little thought. "The inverse process" in the day of Frankland "had been successfully accomplished in comparatively few cases." Through zinc methyl he succeeded in substituting methyl, ethyl, etc., for electronegative constituents, thus "opening up a most extensive and absolutely new field of research."

Next came the syntheses of acids of the lactic series, of the acrylic series (aiming here to produce the higher fat acids by direct synthesis from acetic acid), with the formation of ethers and ketones.

In applied chemistry Frankland studied the "hydrocarbon" process of gas-making and contributed much to the knowledge of gas manufacture. He also studied magnesium as a source of light.

In connection with his studies of the water supply of London he developed new and accurate methods for the determination of the amount of organic carbon and nitrogen in potable waters. As a member of the Royal Commission on the Pollution of Rivers he conducted, during a series of years, most exhaustive researches upon the question of water supply. Frankland also gave attention to the spectra of gases and inquired into the source of muscular power. He presented four or five papers relating to "climate," discussing the physical cause of the glacial epoch. Crooke's radiometer and colored solar halos also engaged his earnest thought.

The preceding lines indicate in a measure the scientific activity of the great investigator whose earthly career ceased on August 9, 1899, at the age of seventy-four years.

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NEW BOOKS.

DETERMINATION OF RADICLES IN CARBON COMPOUNDS. BY H. MEYER. Authorized translation by J. BISHOP TINGLE. New York: John Wiley and Sons. London: Chapman and Hall. ix + 133 pp. 12mo. Cloth. Price, \$1.00.

This book is a translation of the original German edition with various corrections, additions, and changes in arrangement made partly by the author and partly by the translator. The successful methods known at present for the determination of organic radicals have been collected in the five chapters of this little volume, which deal with the following topics: Chapter I.—Determination of hydroxyl; Chapter II.—Determination of methoxyl, ethoxyl, and carboxyl; Chapter III.—Determination of carbonyl; Chapter IV.—Determination of the amino, nitrile, amide, imide, methyl imide, and ethyl imide groups; Chapter V.—Determination of the diazo group, the hydrazo radical, the nitro group, the iodoso group, the iodoxy group, the peroxide group, the iodine number.

The book contains then in compact form much valuable material that the student must ordinarily gather from various texts and periodicals. References to original articles are given. The improvements and additions have brought the book up to date. The translator has done his work in a commendable way. The excellent work of the publishers is too well-known to require further comment.

LOUIS KAHLENBERG.