

again dominated fenland history. All the silt of the Wisbech-Spalding area was laid down and its surface intensively cultivated. Along the tidal rivers, silt banks were built up and stood above the surrounding peat land as habitable areas.

After the Romans left Britain, the fens were not exploited until the drainage which began seriously in the seventeenth century. As it became effective, the shallower lakes, such as Whittlesea Mere, Soham Mere and Benwick Mere disappeared. The ground-level sank by shrinkage and wastage of the peat, often as much as one inch a year, and the silt banks of the Romano-British water

courses began to appear as raised banks, or 'roddons', crossing the peatland.

There is no reason for supposing that the land and sea movement, which has played such a large part in former fenland history, has now ceased entirely. There is some evidence that recent drainage troubles in the fens are due in part to sinking of the coast. It seems possible that the subsidization of work like that of the Fenland Research Committee would be of value not only to science in general, but also to such scientific applications as the drainage of the fenlands.

## Obituary Notices

### Dr. Charles Carpenter

BY the death of Dr. Charles Carpenter on September 7 at the age of eighty years, industry loses one of its greatest administrators and applied science one of its staunchest advocates. Trained from his youth as a gas engineer and with an intimate knowledge of gas engineering practice, his delight in precision caused him to realize the value of allying the scientific mode of thought to engineering practice. It was this combination of science and practice which gave the keynote to his technical work. The development of the Metropolitan Argand No. 2 burner was an example of his personal interest in accuracy of detail and the desire to express a quantity so difficult of measurement as illuminating power with the greatest precision possible. It was recognition of the need for closer co-operation between the scientific and the practical man that led him to take so keen an interest in the work of the Society of Chemical Industry, of which he was president in 1915-17, and the dominating theme of both his presidential addresses was the necessity for bringing the often impractical chemist into closer touch with the engineer, whose work was incomplete without the co-operation of a man viewing things from a more academic viewpoint.

Dr. Carpenter's belief that a vigorous chemical industry was necessary to the welfare of Great Britain was behind the strong support he gave to the formation of the Association of British Chemical Manufacturers. During the Great War, his work as adviser to the Ministry of Munitions was made possible by the deep interest he had taken in the practical application of science, and when in 1917 the Advisory Council for Scientific and Industrial Research decided to establish a Fuel Research Board, Dr. Carpenter was able to give material assistance in arranging for a site and facilities to be placed at the Board's disposal. As a member of the Coal Conservation Committee appointed by the Ministry of Reconstruction in 1918, he showed his belief in the importance of applying scientific methods to the problems of fuel treatment and utilization. The value of his work in designing and putting into

production gas burners of standardized characteristics and of ensuring a gas supply unchanging in chemical composition and properties has, in later years, received the recognition that it deserves; but the introduction of what seemed to many unnecessary refinements in the control of gas quality and in the removal of naphthalene and sulphur made him appear often to occupy a position of isolation among his contemporaries.

As a pupil and the successor of Sir George Livesey, it was to be expected that the ideals of co-partnership should form the keynote of his relationship with the employees whom he controlled, and if Livesey planted a sapling, it is Carpenter who has cultivated it until it has grown to the dimensions of a healthy tree. His career is throughout a record of painstaking devotion to duty inspired by ideals of honesty and fairness. Entering the South Metropolitan Gas Co. as an engineering pupil at its Vauxhall works, his unusual ability caused him to be appointed to the position of works engineer at the age of twenty-six years, and on the death of Sir Frank Livesey in 1899 he was appointed chief engineer of the Company. When in 1908 Sir George Livesey died, he was chosen by the Board of Directors to succeed him as their chairman, a position which he held, with the altered title of president, until ill-health compelled his retirement in 1937.

E. V. E.

WE regret to announce the following deaths:

Cavaliere Filippo de Filippi, Hon. K.C.I.E., a well-known Italian explorer, who led the Italian expedition of 1913-14 to the Himalaya, Karakoram and Eastern Turkestan, on September 23, aged sixty-nine years.

Prof. Derrick Norman Lehmer, emeritus professor of mathematics in the University of California, on September 8, aged seventy-one years.

Dr. A. S. Mackenzie, president of Dalhousie University, Halifax, Nova Scotia, during 1911-31, formerly professor of physics in Bryn Mawr College, Dalhousie University and the Stevens Institute of Technology, aged seventy-three years.