

MR. JOHN ROE was born at Ashbourne, in Derbyshire, on the 24th of July, 1795. He was educated at Skipton, Uffington, and Wantage Academy. In 1813 he assisted his father in the construction of the Wilts and Berks Canal; also, about the years 1820-1826, in the construction of the Regent's Canal. As a contractor he carried out numerous works, both public and private; among them a railway from Moreton-in-the-Marsh to Stratford-upon-Avon in 1825, also a road near Long Compton in 1827.

In the year 1830 he was appointed surveyor to the Holborn and Finsbury Commissioners of Sewers, an office he held until the commission was superseded. He eventually became Surveyor-in-Chief to the Metropolitan Commissioners of Sewers, and finally retired from that office on a pension. During his term of office he carried out a series of important and valuable improvements in relation to drainage. After making a number of observations, and ascertaining by measurement the proportion of liquid to solid sewage, also the quantity of sewage matter carried off by the sewage stream in suspension, he established the present practice of cleansing sewers by flushing, and abolished the obnoxious system of opening the sewers and lifting the sewage by windlass and bucket. Then followed the construction of egg-shaped sewers in lieu of flat-bottomed sewers and semicircular-bottomed sewers, also of side entrances, improved gully drains, and house drains. Mr. Roe introduced the system of pipe drains, and expended much time for many years in ascertaining the effect of rainfall upon the sewage streams within the sewers. Night and day, for a long period, the sewage and rainfall of a given area were measured, the rainfall gauged, and the loss by absorption in different soils and by evaporation ascertained. The plan of emptying by the night-cart gave way to that of removal by pumping, after disinfection and dilution, direct into the sewers; and eventually the cesspools, to a large extent, were abolished, and the present prevailing system of water-closet established. A series of experiments were also carried out on the quantity and velocity of water flowing through pipes of different diameters and varying falls. The results of some of Mr. Roe's investigations were embodied in the tables published by the General Board of Health, in 1852 and subsequent years, in their Minutes of Information for Local Boards of Health.¹

Mr. Roe also designed a scheme for the Northern drainage of London, and his Report thereon was presented to the Metropolitan

¹ *Vide* also Minutes of Proceedings Inst. C.E., vol. xii., p. 96.

Commissioners of Sewers on the 23rd of October, 1854.¹ In 1850 Mr. Roe was appointed to carry out the drainage of Windsor. His advice was also obtained for the drainage of Eton, Eton College, Derby, Beaconsfield, Reading, Harrow-on-the-Hill, and other places. In the drainage of Harrow the outfall pipe was 18 inches in diameter only.

Mr. Roe was elected an Associate of the Institution on the 1st of February, 1842, and on the 19th of the same month contributed a Paper "On the Causes of Accumulation of Deposit in Sewers,"² in which the usual mode of removing that deposit was alluded to, and a description was given of a flushing apparatus for cleansing sewers. He died on the 15th of March, 1874, aged seventy-nine years.

GENERAL SIR JOHN MARK FREDERIC SMITH,³ K.H., R.E., F.R.S., the son of the late Major-General Sir J. F. Sigismund Smith, K.C.H., R.A., and grand-nephew of Field Marshal Baron Von Kalkreicht, Commander-in-Chief of the Prussian Army, was born at the Manor House, Paddington (then the only house there), on the 11th of January, 1790. He entered the Army as second lieutenant of the Royal Engineers, on the 11th of December, 1805; and, after passing through the various grades, finally became General on the 3rd of August, 1863, and was the senior Colonel Commandant of the corps of Royal Engineers. He thus held commissions from four sovereigns. He served in Sicily from 1807-12. In 1809 he was at the siege of Ischia and the capture of that island, and of Procida, in the Bay of Naples. He was also at the capture of Zante and Cephalonia. In 1810, in the action before the investment of the fortress of Santa Maura, he was deputy assistant-quartermaster-general, and at the siege and capture of the fortress he served as an officer of Royal Engineers. He was Inspector-General of Railways till November 1841; and in that capacity he examined and reported on the London and Birmingham, and the other principal railways before they were opened to the public; besides being on several occasions a Royal Commissioner on railways, harbours, &c. In 1845 he was Chairman of the Commission to Inquire into the Gauge of Railways, and, in 1846, one of the Commissioners appointed to investigate the various projects for establishing

¹ A copy of this Report is preserved in the Library of the Institution. [Tract, Svo., vol. 108.]

² *Vide* Minutes of Proceedings Inst. C.E., vol. ii. (1842), p. 132.

³ The substance of this notice is taken from the "United Service Gazette."—ED.