

ALFRED PHILLIPS was born in the year 1844, and served his articles as a mechanical engineer to Mr. John Imray, of the Collinge Engineering Works, Lambeth, and to that gentleman's successors, Messrs. Whieldon, Lecky and Lucas. He was also for a time in the works of Messrs. Fox, Walker and Co., of Bristol, as an improver. His first appointment was that of Surveyor and Engineer to the Rural Sanitary Authority of Dorchester, where he remained for three years. He next obtained a similar post at Festiniog, his chief work being an improvement in the system of drainage, and the bringing of a supply of water from a lake in the mountains 5 miles distant from the village, a work of much difficulty. He remained at Festiniog for eight years. He was then appointed Surveyor of Ely, which position he held until August, 1888, when failing health compelled him to resign. He died of consumption on the 8th of February, 1889.

Mr. Phillips was elected an Associate on the 1st of December, 1874, and on the reconstruction of that class was made an Associate Member.

HENRY LEE was born on the 31st of August, 1823, and was the eldest son of Mr. Henry Lee, who died in 1867, senior partner of the firm of Henry Lee and Son. The firm was originally John and Henry Lee, builders and contractors, of Chiswell Street, Finsbury; subsequently Henry Lee and Sons; afterwards Henry and John Lee (the two sons above mentioned); and eventually, on the retirement of his uncle, Mr. John Lee, in 1848, the subject of this notice, who passed his earlier business years with the latter firm, was taken into partnership with his father, the firm being then known as Henry Lee and Son.

Mr. Henry Lee, personally, preferred the carrying out of engineering works, rather than the building contracts, and greatly interested himself in the construction of the Admiralty Pier, Dover, commenced in 1847. The manufacture of large concrete blocks with Portland cement was at that time in its infancy, and it is probable that the testing of Portland cement (about which so much has been since written) was then first brought into notice. Mr. Lee also designed a revolving cylinder, the first of its kind, for mixing concrete by machinery, which has not been surpassed for cheapness and efficiency by any subsequent machines.

Among other contracts carried out by the firm during Mr.

Henry Lee's connection with it may be mentioned :—The Money-order Office of the General Post Office; the Record Office, first portion; warehouses, Wood Street; bridges and approaches to Victoria Park.

Widening and extension of Greenwich Railway; extension of the London and South-Western Railway from Nine Elms to Waterloo, and stations in connection. Railway from Dumfries to Dalbeattie, on the Castle Douglas and Dumfries Railway. Caledonian Railway; Leith branches and dock-walls in connection. Rutherglen Branch Railway; Railway at Lanark; stone railway-bridge over the Tay at Perth.

Harwich breakwater; deepening Harwich harbour; extension of sea-wall to Dovercourt; sea-wall, groyne, and parade, Dover; extension portion of Hartlepool breakwater; sea-wall and concrete groyne, Hastings.

Union entrance and patent slip, Dover harbour; alterations, new entrance to and deepening of Granville dock, Dover harbour; Laird's graving-docks, ship-building yards, and factory buildings, Birkenhead; Clover and Clayton's ship-building yards and factory buildings, Birkenhead; Surrey Commercial Docks, including Lavender entrance, communication lock and wharf walling, alterations and deepening Lavender dock, works in Acorn dock, dock wall, Lady dock, alteration of warehouses, &c.; Aberdeen Steam Navigation Company's dock and warehouses at Limehouse; new lock entrance and other works at Ipswich docks; new dock and piers, Felixstowe.

Thames steam-ferry, river-wall and buildings; extension of T Pier, Royal Arsenal, Woolwich; river-wall for Trinity House at Blackwall; jetty and dolphins, for Anglo-American Oil Company, at Purfleet.

Foundation and upper works at breakwater fort, Plymouth; foundation and works at end of Dover pier; Fort Wallington, Fareham; Garrison Point, Fort Sheerness; Hoo and Darnet Forts, on the Medway; south front casemated barracks, Dover; outer batteries at fort at Landguard; alterations to batteries at Harwich; alterations at Walton, Suffolk; new fort, Landguard, Suffolk.

Filter-beds, engine-houses, &c., for New River Company, at Green Lanes, Stoke Newington; large covered reservoir for New River Company, at Crouch End; reservoir for Grand Junction Waterworks Company at Ealing; filter-bed for the same Company at Hampton.

Gasholder tanks for the North Middlesex Gas Company, at

Mill Hill, for the Southend Gas Company, at Southend, and for the Ascot Gas Company, at Sunning Hill.

In 1886, Mr. Lee's firm undertook the construction of the Amsterdam Ship Canal, which large undertaking comprised the building of two piers in the North Sea, and the formation of a harbour.¹

The death of Mr. Lee's father, soon after the commencement of this contract, threw heavy additional work upon him. Most people in Holland refused to believe that the work would ever be completed, and they consequently declined to support it financially; but they now have the satisfaction of seeing large ocean steamers pass through the canal direct from Amsterdam to the Dutch Colonies.

This contract, the affairs of which were not finally cleared up until 1880, no doubt told greatly upon Mr. Lee; his health became far from good, so much so indeed as to make him disinclined to enter into further heavy contracts. At the time of his death, which took place on the 1st of March, 1889, he was Chairman and Managing Director of the Lake Copais Company, for the reclamation of about 60,000 acres of land near Thebes, in Greece, these works being now in full progress.

Mr. Lee was elected an Associate of the Institution on the 7th of February, 1865.

GEORGE SPENCER was born at Brighton on the 17th of June, 1810, and at an early age attended the engineering classes of the Birkbeck Institute. He subsequently worked in the drawing office of the late Mr. George Dempsey, and was also extensively employed surveying during the great extension of the railway system throughout the country from 1845 to 1848. He was at a later period employed by Messrs. Fox, Henderson and Co., in assisting in the designing and erection of bridges and roofs, and the designing of railway rolling-stock. Amongst the many works with which he was connected under the above firm was the Building for the Great Exhibition of 1851, the drawings of which he executed, and the Bricklayers' Arms goods station of the South-Eastern Railway Company, the erection of which he superintended. In the year 1852 he founded the business of George Spencer and Co., for the purpose of supplying railways with india-rubber springs, &c., for which he from time to time took out several patents, which have been extensively used.

¹ Minutes of Proceedings Inst. C.E., vol. lxii. p. 1.