

in which he was accustomed to write the records of his journeyings as the "Hermit of Westminster," and which reveal his kindly nature.

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WALTER HALSTED CORTIS STANFORD was born at Worthing in the year 1840, and was educated by Dr. J. M. Pearce, Crawford College, Maidenhead. In the year 1859 he was articled to Mr. (now Sir Robert) Rawlinson, and very soon became proficient in neat and accurate draughtsmanship, giving promise of the skill in designing which he so highly developed in later years. On completing his apprenticeship, Mr. Stanford spent some time on the contractors' staff of the Mid-Wales and Conway and Llanrwst Railway, and, in 1863, was engaged on the Geneva tramways and on surveys for tramways in other continental cities. From 1863 to 1866 he was employed, first as Assistant to Mr. Hugh U. McKie, and then as Engineer to the Concessionaire (the late Mr. Edmund Sharpe) of the Perpignan and Prades Railway, and during that time made the surveys for several branch mineral lines. While in the Pyrenean district, Mr. Stanford endeared himself greatly to a large number of young Frenchmen and became very proficient in their language. Unfortunately, he there had his first attack of rheumatic fever, no doubt initiating the heart weakness which ultimately caused his death.

In 1867 and the two following years Mr. Stanford acted as one of the Belgian Public Works Company's Engineers on the *Assainissement de la Senne* works in Brussels, having charge of the outfall sewer and all other works outside the city. As usual he made many friends, among others the eminent Belgian artists, Dillen and Schœnflère, the latter of whom painted an admirable portrait of him. Mr. Stanford was in Brussels during the year 1866, when the English Volunteers paid so successful a visit to that city, and when his cousin, Captain Alfred Cortis, one of the most noted English riflemen, won the King's prize. On that occasion he was most useful as interpreter, and in many other ways, to the large contingent of volunteer officers who were in the Belgian capital. Although he was too much engrossed with his professional work to give any time to practice, Mr. Stanford won the first prize at Aachen in the following year against all comers, volunteers included.

In 1870, Mr. Stanford returned to London and joined the firm of Lawson and Mansergh, of Westminster. After Mr. Lawson's death in 1873, he acted as chief assistant in that office, and in that

capacity was connected with the following works, viz., the main sewerage or sewage disposal works of Bedford, Tunbridge Wells, Bishops Stortford, Barnet, Middlesborough, Clevedon, Reading, Lincoln, Chesham, Southport, Southborough, Gloucester, Grantham, St. Albans, Beckenham, Bracebridge, Bethesda, Waltham, Burton-on-Trent, &c., and the water-works of Rotherham, Chesham, Uxbridge, Sandringham, Singapore, Lancaster, Sherborne, Gloucester, Dorking, Stockton and Middlesborough, Mountain Ash, &c. He also assisted in the surveys and reports for a large number of other schemes for sewerage and water, including York, Derby, Rotherham, Abingdon, Malvern, Staines, Lower Thames Valley towns from Hampton to Barnes, North-West London and Lee Valley scheme; also in work connected with the preparation of evidence for the arbitration between the Thames Conservators and Metropolitan Board as to mud banks at the sewer outfalls, for Lord Bramwell's Commission, and for many Parliamentary and Local Government Board enquiries. He was elected an Associate of the Institution on the 5th of May, 1874, and was transferred to Member on the 27th of May, 1884.

One of the last works Mr. Stanford was engaged upon was, very strangely, the enlargement of the pier in his native town of Worthing, on the original drawings of which structure he had been occupied in Sir Robert Rawlinson's office thirty years previously. To Mr. Stanford's good taste and skill is principally due the graceful simplicity of the new hall recently opened upon the enlarged pier. He was remarkably clever and quick in the working out of ingenious details of construction, especially in ironwork.

About fourteen years ago, Mr. Stanford invented a joint for stoneware pipes, which has been largely and successfully used all over the country, and for which he received honours at several exhibitions. It consisted in casting into the socket and upon the spigot of these pipes (which never came out of the kilns true in shape) male and female rings of an asphalt-like material, which, when put together, form a mechanically-fitting joint as in cast-iron bored and turned pipes, the ring in the socket being a section of a cone, and that on the spigot a section of a sphere. All that is needed in laying pipes so prepared is to see that both rings are clean, then to smear the spigot with fine grease, insert it in the socket and press home. Joints made carefully in this way are absolutely water-tight under several feet pressure. This was the first successful attempt to meet a want which had been felt for years, and, in many respects, it is still the best stoneware

pipe-joint in the market. Mr. Stanford also patented in 1885 several modifications of a most ingenious friction-clutch, for which he was awarded a silver medal in 1886.

After his first attack of rheumatic fever in the Pyrenees, Mr. Stanford had at several years' interval two other similar illnesses, and the heart weakness which supervened prevented him for some time before his death from undertaking any work demanding great physical exertion or undue excitement; but until the middle of 1888 it did not interfere with his regular indoor office work, in every branch of which he was most able and proficient. He was advised in the early spring of this year to give up work entirely, and take rest and change in the form of a voyage to the Mediterranean. This he did, but the excitement and exertion were unfortunately too much for him, and he returned worse in every way than when he started. He then went to his home at Worthing, and two days before his death was out on the pier in a bath-chair with Mr. Ernest Mansergh, who had charge of the works, and to whom he spoke quite cheerfully of the improvement which total rest was bringing him. This was, however, a false hope, and he died suddenly and quietly on Saturday the 18th of May, 1889.

Mr. Stanford made friends wherever he went, he was always considerate and helpful to his juniors, and courteous and gentlemanly to all with whom he was brought into business contact, and his loss is very deeply lamented by those with whom he was most intimately connected.

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GEORGE TURNBULL, who for several years previous to his death had occupied the position of Father of the Institution, passed away on the 26th of February, 1889. He was the youngest of eleven children of William Turnbull, of the Huntingtower bleach-fields, near Perth, and was born at Luncarty on the 2nd of September, 1809. He received his early education at the Perth Grammar School, and finished his studies at Edinburgh University. A comrade named David Hogarth, to whom through life Mr. Turnbull remained strongly attached, passed on to London in order to study engineering under Thomas Telford, and Mr. Turnbull resolved to adopt a similar course. His friend Hogarth eventually was ordained, and was for thirty-three years Rector of the Isle of Portland, where he died; but George Turnbull had found his true vocation, and speedily rose to be one of Mr. Telford's most trusted assistants. Beginning in 1828 on the preparatory works of