

the Elk" (*Journal of the Linnean Society*, vol. xiv.); "Notes on . . . two Species of Crustacea (*Ann. and Mag. of Nat. History*, 1870), and "Notes on Congenital Absence of the Kidney" (*Edin. Med. Jour.*, 1874).

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Rev. FRANCIS REDFORD, M.A. By Henry Barnes, M.D.

The Rev. Francis Redford, M.A., who died on the 20th of last September, was one of the oldest and most notable clergymen in the diocese of Carlisle. He was born at York in 1813, and at an early period showed remarkable intelligence and aptitude for scientific work. He received his early education in the public schools of the city in which he was born, and afterwards, with the intention of adopting the medical profession, he entered King's College, London, as a medical student. After obtaining some considerable amount of medical training, which was very useful to him in after life, circumstances arose which made it desirable that he should adopt another career, and in 1837 he was sent out by the Church Missionary Society to Trinidad as a catechist. He remained in that country for four years, doing much good work, but owing to failure in health he was compelled to return to this country in 1841.

He then set about studying for the ministry of the English Church, and I am informed he was ordained deacon on June 11, 1843, by Charles James Blomfield, Bishop of London. He held curacies both in Herefordshire and Nottinghamshire, but a love of missionary work and travel induced him to again try the climate of the West Indies, and in 1844 he went out to Jamaica. A breakdown in his health compelled him to return in 1847. Three years later, in 1850, he was appointed to the living of St Paul's, Silloth, and here he continued to reside during the remainder of his life. Here it was that he made those observations on meteorology by which he will chiefly be remembered. At the time of his appointment, the now popular watering-place of Silloth was a desert of sandhills; there was not a single house there, and the part which he took in developing the place and promoting its prosperity is generally recognised. In the place of a sandy desert, there is now an

important seaport, with its docks, pier, regular railway and steam-boat communication, and abundant accommodation for visitors. By his meteorological observations, which were regularly published in the Reports of the Registrar-General and in the *Transactions* of the English and Scottish Meteorological Societies, of both of which he was a Fellow, he demonstrated the remarkable fact, that as regards the amount of ozone, signifying an absence of impurity, and in the amount of sunshine, Silloth occupied a very conspicuous position. This demonstration, proved by the careful record of many years' observations, has given Silloth a character which has undoubtedly contributed to its popularity as a health resort. He was the honorary secretary of the Cumberland and Westmoreland Convalescent Institution, from its foundation in 1862 to within a few weeks of his death, and by his energy and painstaking efforts in this capacity, he contributed materially to the success and prosperity of this valuable institution. His knowledge of botany was considerable, and he was an intimate friend of the late Professor Balfour. In the use of the microscope and telescope he was often engaged, and for many years he was a Fellow of the Royal Astronomical Society. The degree of M.A. was conferred upon him in 1860 by the Archbishop of Canterbury, and he was elected a Fellow of this Society in 1865.

Although he was in the daily habit of making scientific observations, I cannot find that he ever contributed any paper to our *Proceedings*. This is much to be regretted, as he had undoubtedly accumulated much valuable material, and the record of his labours in the department of meteorology fill many volumes. These have now come into my possession, and as I do not think a more fitting home could be found for them than the Royal Society of Edinburgh, I have much pleasure in handing them over for permanent preservation. In doing so it may be of service if I give a short account of the contents.

*No. 1.* A large volume of meteorological observations, taken daily at 9 A.M. and 9 P.M. from March 1854 to December 1868, giving the rainfall, wind, thermometer, hygrometer, and barometer. The ozone observations commence in April 1868. There is an interval of a few years, and the observations begin again in January 1874, and continue to December 1875.

*No. 2.* A volume containing observations of a similar kind, taken twice daily from January 1876 to January 1877.

*No. 3.* Twelve volumes containing detailed observations for the following years, viz., 1871, 1872, 1873, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, and 1884. The sunshine observations commence in 1881.

*No. 4.* A volume containing full observations from October 1876 to March 1877.

*No. 5.* A volume containing daily notes on thermometry and rainfall for 1869 and 1870, and monthly averages for 1872 and 1873.

*No. 6.* A volume giving a comparative statement of the rainfall, and readings of barometer and thermometer taken at Lewisham, Kent; Highfield House, Notts; and St Paul's Parsonage, Cumberland, from March 1854 to February 1855.

Together with these volumes there is another MSS. volume illustrative of the meteorological history of this district, which I desire to present to the Society at the same time. It is a volume of observations from January 1838 to May 1842, taken at Carlisle by the late William Elliot, M.D. Edin., and was found among Mr Redford's papers.

Before a Society like this, it would be out of place to refer to the manner in which he discharged his parochial and ministerial duties. Suffice it to say that he had many attached friends, that he found his chief relaxation in scientific studies, and that in a widely scattered agricultural community he could not find much companionship. The development of Silloth did much to give him, in this latter matter, much of what he formerly missed, and few of the scientific visitors left without visiting his observatory.

His health of late years had not been robust, but latterly symptoms of malignant disease of the abdomen set in. His last illness, which was of a painful character, was borne with great fortitude. No one knew better than himself there was only one possible termination, but amid his sufferings he found relief by turning to his scientific pursuits, and by the reflection that during the course of a long and active life he had accumulated observations that would be of value to his fellow-men.