The following Notices have been prepared by the Assistant Secretary, Mr George A. Stewart.

(Read January 9, 1922.)

ALFORD, ROBERT GERVASE, M.Inst.C.E., son of the late Rt. Rev. Bishop Alford, died at his residence "Three Gables," Tunbridge Wells, on the 10th May 1921, aged 72 years. He was elected a Fellow of this Society in 1895.

ANDERSON, Sir ROWAND, LL.D. (born 1834), the son of Mr James Anderson, an Edinburgh solicitor, was educated at George Watson's Old Hospital School, which occupied part of the site of the Edinburgh Royal Infirmary. He was for a time in the office of Messrs Keegan & Welsh, solicitors. His bent, however, was in another direction. From early years he had shown a fondness for drawing. He studied for a time at the Trustees' Academy, Royal Institution, under the late Mr Christie, a contemporary of Dick Lauder. Afterwards he entered the office of Mr John Lessels, one of the leading Edinburgh architects of the day; and to his young assistant was entrusted in 1857 the work of superintending the restoration of the roof of Greyfriars Church, which had been destroyed by fire. Subsequently he made a tour on the Continent, and for a time worked in the office of Cuypers, Amsterdam, then in great repute. also served for a period in the London office of Sir Gilbert Scott, the great Gothic architect, who had a high idea of the abilities of the young Scotsman. On returning to Edinburgh he was employed in the architectural branch of the Royal Engineers; then as partner to the distinguished Scottish architect, David Bryce. In the sixties he settled down to business on his own account in an office in Dundonald Street.

From the outset Sir Rowand was looked upon as a rising man, and was kept busily employed in the designing of churches, especially Episcopal churches, of which denomination he was a member. Sir Rowand Anderson's designs were accepted for the following buildings:—Fountainbridge, Stockbridge, and Causewayside Board Schools, the stately New Medical School of the University, and the M'Ewan Hall. It was in connection with the completion of the New Medical School that at the memorable celebration of the Tercentenary of the University of Edinburgh in 1884, he received the honorary degree of LL.D. To him was also entrusted the task of completing Adams' design of the Old University by

crowning it with a dome. His name is also identified in the public mind as the designer of the Scottish National Portrait Gallery and Museum of Antiquities, Queen Street. The palace reared by the late Marquis of Bute at Mountstuart may be cited as the most important example of the abilities of the architect in this branch of his art. Other architectural works of note were executed by Sir Rowand during his long professional career.

In connection with church architecture, Sir Rowand Anderson was frequently consulted regarding schemes for the restoration of ancient buildings; and it was he who carried out the restoration of Dunblane Cathedral, the Chapel of King's College, Aberdeen, Borthwick Parish Church, and Culross Abbey. He was employed by the late Marquis of Lothian to devise measures for the preservation of Jedburgh Abbey, and these were renewed previous to this ancient religious house being handed over to the Ancient Monuments Commission.

A scheme with which he was intimately associated, and in connection with which he did lasting work for his profession and for the arts and crafts of the city, was the founding of the College of Applied Art, which had its headquarters in the Royal Institution, Mound, and was under the ægis of the Board of Manufactures. In the formation of the Edinburgh College of Art Sir Rowand also took much interest. He was elected an Associate of the Royal Scottish Academy in 1876, but resigned in 1883 on a question as to the architectural status of Members of the Academy. During the Presidentship of Sir George Reid, Sir Rowand Anderson in 1896 was elected an Honorary Member of the Academy, and the feud was in that way peacefully ended. In 1902 he received the honour of knighthood. It may be mentioned that he rendered good service to this Society during the transference from the Royal Institution to our present building. He was a man of wide sympathies, and despite a certain reserve in temperament, had a large circle of friends. He was elected a Fellow of the Society in 1883, and died at his residence in Colinton on the 1st June 1921, at the age of 87.

Beck, Hon. Sir J. Henricus Meiring, Kt., M.D., J.P., M.R.C.P.E., M.L.A., son of the late C. Beck, J.P. of Worcester (Cape), was born at Worcester (Cape Province) in 1855. He was educated at Worcester Public School. South African College, University of Edinburgh, Berlin, and Vienna; was one of the delegates from the Cape of Good Hope to the South African National Convention, and was a Member of Council of the University of the Cape of Good Hope from 1888–1912. For a period he filled the position of President of the Cape Medical Council. From 1916 he was

Minister of Posts and Telegraphs, Union of South Africa, was a Senator from 1910, and Chairman of Committees of Senate.

He was elected a Fellow of the Society in 1892, and died in 1919.

BRIDGER, ADOLPHUS EDWARD, B.Sc. (Paris), B.A., M.D. (Edin.), F.R.C.P.E., held the following posts:—Senior Physician, St Pancras Dispensary; Consulting Physician in Tuberculosis, Borough of St Pancras; Physician Superintendent, London Hospital for Women; Physician, Chest Hospital, Margaret Street; and Anæsthetist, Royal Dental and National Dental Hospitals. He was a member of the Society of Authors, and published the following:—Digestion, Perfect and Imperfect; Depression; Biliousness; Man and his Maladies, 1889; The Treatment of Consumption, 1891; Minds in Distress, 1913; The Function of the Sympathetic Nervous System in Psychic Phenomena, 1913.

Dr Bridger was elected a Fellow of the Society in 1912, and died in London on 2nd February 1920.

Brown, David, F.C.S., Manufacturing Chemist, was born in Edinburgh in 1840. He succeeded his father, Mr D. R. Brown, as senior partner of the firm of J. F. Macfarlan & Co. He was educated at the Royal High School, and studied Chemistry at the University of Edinburgh. For some time he assisted Professor George Wilson in Edinburgh, and afterwards Professor Anderson in Glasgow. At a later period he joined the staff of the Apothecaries' Hall in London, thus gaining a knowledge of applied pharmacy. Thereafter he was engaged in the manufacture of chemical substances used in medicine.

Though engrossed in the management of the business, Mr Brown was the author of several valuable papers on chemical subjects published in the *Pharmaceutical Journal* and elsewhere. Notes on Chloroform and on the location of Salicin in Willow Bark are among his published papers. Though he refrained from publishing anything on the opium alkaloids, he recognised oxynarcotine as an undescribed substance, and handed it over to Dr Wright, who made an analysis and gave the results to the Chemical Society.

The preparation of salicin from willow bark was begun in Mr Brown's time. He was a Justice of the Peace and a member of the Merchant Company in Edinburgh.

Mr Brown was elected to the Fellowship of this Society in 1893, and died on 21st June 1921 at his residence, Willowbrae House, Edinburgh. His son, Mr Rainy Brown, died a few months earlier.

Brown, David Rainy, was educated at the Edinburgh Institution, under Dr Ferguson, and at Edinburgh University. He also studied in Germany. Entering the firm of J. F. Macfarlan & Co., Manufacturing Chemists, Edinburgh, as a young man, he later succeeded his father, Mr David Brown, the subject of the immediately preceding notice. Mr Brown accomplished a considerable amount of research work on Opium and Chloroform and published papers in the *Pharmaceutical Journal*. An old member of the Queen's Edinburgh Volunteers, he served during the war in connection with Coast Defence Work.

He was elected a Fellow of the Society in 1911, and died at Edinburgh on 9th January 1921, at the age of 50.

CARTER, WILLIAM ALLAN, O.B.E., J.P., M.Inst.C.E., was a son of Mr Frederick Hayne Carter, C.A., and was born in Edinburgh in 1847. He received his early education at the Edinburgh Academy, and was afterwards trained as a Civil and Consulting Engineer. For a long period Mr Carter was a member of the Dean of Guild Court of Edinburgh, and from 1909 to 1913 he served as Lord Dean of Guild—an office which gave him a seat as a Member of the Town Council of Edinburgh. He acted also for some time as Engineer to the Convention of Royal Burghs, was Secretary to the Royal Scottish Society of Arts, and Hon. President of the East of Scotland Engineers' Association.

Mr Carter started his professional career in paper engineering, and specialised in the recovery of soda in that connection. He was engaged later in the construction of bridges, water supplies, and drainage schemes, etc., for County Councils and Burghs. Appearing often in the Court of Session as an expert witness, he was greatly respected for his broad and moderate views and courteous manner. Mr Carter frequently acted as Examiner for the degree of D.Sc. in the University of Edinburgh. He was known to a wide circle of acquaintances as a man of outstanding ability and high professional skill, a capable administrator, and also a gentleman of wide culture.

Mr Carter was elected to the Fellowship of the Society in 1898, served on the Council from 1911–1914, and represented the Society on George Heriot's Trust from 1911–1918. He died at his residence at Gullane on 7th September 1921.

DUNDAS, WILLIAM JOHN, W.S., LL.D., was the son of the late Lord Manor, and an elder brother of Lord Dundas. Born in 1849, he was educated at the Edinburgh Academy under Mr James Carmichael, and, on leaving school, entered the writing chambers of Messrs Dundas & Wilson, as an apprentice. He was admitted a Writer to the Signet in 1871, and a few years later became a partner. In 1913 he retired from business. On the formation of the present Government he returned for two years to the post of Crown Agent, which he had held from 1895–1905. Dr Dundas was for many years a Director of the Standard Life Assurance Company, and was also on the Board of the Edinburgh Academy. In recent years he rendered admirable service as one of the Carnegie Trustees, and in 1914 received the degree of LL.D., from the University of Edinburgh. He stood in the direct line of the best Scottish legal traditions, and his place will be difficult to fill.

Dr Dundas, who was interested in the study of the higher mathematics, was elected a Fellow of the Society in 1919, and died at Edinburgh on 9th July 1921.

GATEHOUSE, TOM ERNEST, A.M.Inst.C.E., M.I.Mech.E., M.I.E.E., was born in 1854 at Norwich, in Norfolk. He was the son of Mr Tom Gatehouse, a mechanical engineer; naturally, therefore, he had a bent towards engineering as a profession, and about 1870 he became a pupil of Robert Sabine, one of the most eminent and able pioneers in the electrical industry. Later he was associated with Sir Charles Wheatstone and Sir Samuel Canning, foremost exponents of the art of telegraphy on land and by submarine cable. Amongst the various undertakings with which he was closely connected were the first electric lighting of Aldgate Station with Lontin arc lamps, and the development of the Werdermann arc lamp and the Gramme dynamo; in regard to the Lontin lamp he patented an improvement. He was also interested in the development of the telephone and experimented with a view to its improvement. The introduction of the incandescent lamp, however, indirectly proved to be a turning point in the career of Mr Gatehouse, who invented a device (afterwards re-invented in connection with the Nernst lamp) for the patent rights of which he received a substantial sum. About this time his fellow-pupil under Sabine, Mr H. R. Kempe (subsequently Electrician to the Post Office), had become associated with Mr H. Alabaster, proprietor of the Telegraphic Journal and Electrical Review, and invited Mr Gatehouse to throw in his lot with them. Mr Gatehouse assumed the office of editor in 1881. In recent years, owing to failing health, he has not taken a very active part in the production of the Electrical Review.

Mr Gatehouse was elected to the Fellowship of the Society in 1899, and died in London on Thursday 31st March 1921.

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GILRUTH, GEO. RITCHIE, L.R.C.P., L.R.C.S.Edin. 1865, held the following appointments:—Surg. Lt.-Col. (V.D.) 1st. Edin. (City) V. Artillery; Asst. Demonstrator of Anatomy R.C.S. Edin.; Res. Surgeon Consett Infirmary; and was the author of *Physiological Effects of Injuries of the Spinal Cord in the Lower Animals*, and papers to the *Lancet* and *Edinburgh Medical Journal*.

He was elected a Fellow of the Society in 1880, and died at Allanton, Bridge of Allan, on 15th August 1921.

Helme, Thomas Arthur, M.D. Edin. (Gold Medal) 1889, M.B., C.M. (Hon.) 1885, M.R.C.S. Eng. 1894, M.R.C.P. Lond. 1894, was educated at Edinburgh University, University College, London, and the University of Strasburg. He was Freeland-Barbour Research Scholar R.C.P. Edin. in 1890; Leckie-Mactier Fellow 1886; Buchanan Scholar 1885, University, Edinburgh; Exhib. Univ. Lond. 1884; Hon. Phys. Northern Hosp. Women and Children, Manchester; V.P. N. of England Obstetrical Society; and President Lancs, and Ches. Branch B.M.A. He held the following appointments:—Physician, Women's Dispensary, Edin.; Res. Surg. Roy. Maternity Hosp. Edin.; Res. Obst. St Mary's Hosp. Women and Children, Manchester; and communicated a paper to the Transactions of this Society (vol. xxxv) on "Histological Observations on the Muscular Fibre and Connective Tissue of the Uterus during Pregnancy and the Puerperium." He was author of the Anatomy and Physiology of the Uterus, 1889, and published papers in the Medical Chronicle, 1893, and in the British Medical Journal, 1907.

Dr Helme was elected to the Fellowship of this Society in 1890, and died on 5th September 1921.

Hunter, James, F.R.C.S.E., F.R.A.S., was one of the oldest Fellows of the Royal College of Surgeons, Edinburgh, and was well known in medical circles. For a number of years he was Lecturer in Physiology to the School of Medicine of the Royal Colleges, and latterly he acted as Examiner in Biology and Physiology for the Royal College of Surgeons in the triple qualification. He was a keen amateur astronomer, interested in optics, and published several papers in the Scottish Microscopical Society's Transactions and Proceedings, and a joint paper with Mr E. Sang in the Proceedings of this Society, vol. viii, 1873, p. 126: "Observations and Experiments on the Fluid in the Cavities of Calcareous Spar."

Dr Hunter was elected a Fellow of the Society in 1887, and for many years regularly attended its meetings. He died at Edinburgh on 15th February 1921.

MARTIN, Sir THOMAS CARLAW, LL.D., J.P., was born on 10th April 1850 near Linlithgow, of farming stock. He was trained in the country schools, until, in early manhood, he attended the Watt (now the Heriot-Watt) College and Edinburgh University, in which institution he was Gold Medallist in the class of Political Economy. After some years spent in the Post Office, he became associated with journalistic work, and eventually made it his profession. Sir Thomas was the first and only editor of The Leader, which continued for some years as a Gladstonian-Liberal paper in As editor of the Dundee Advertiser for eighteen years he became a prominent figure in Scottish journalism. St Andrews University conferred on him the LL.D. degree. While essentially a student and reflective observer of public affairs, he was especially interested in agriculculture and economics. In 1904 he was a member of the Scottish Agricultural Commission to Denmark, and the report of that commission contains many suggestive and readable pages from his pen. In 1908 he was Chairman of the Scottish Agricultural Commission in Canada, and in the same year received the honour of knighthood. In 1910-1911 he was Chairman of the Australian Agricultural Commission, and in 1911 was appointed Director of the Royal Scottish Museum. An able administrator, he did much to improve the working conditions there, and developed its educational possibilities, keeping in view not only the needs of the student but of the large number of casual visitors and children from the schools. For these he wrought out schemes, and with the introduction of guides and lectures brought the wealth of the Museum before a growing public. After his retiral from the Directorship of the Museum he acted as Chairman of the Transport Committee, and contributed largely to its report. At the time of his death he was Chairman of the local Employment Committee under the Ministry of Labour.

Sir Thomas was elected a Fellow of the Society in 1912, and died at Edinburgh on 26th October 1920.

MYLNE, Rev. ROBERT SCOTT, M.A., B.C.L., Oriel College, Oxon., F.S.A. L. and E., Rector of Furthoe, Northants, died at his residence Great Amwell, Ware, Herts., on 23rd November 1920, in his 67th year. He was elected to the Fellowship of the Society in 1902.

OLIPHANT, JAMES, M.A., formerly Headmaster of Charlotte Square Institution, Edinburgh, died at his residence, 11 Heathfield Park, London, N.W. 2, on 19th February 1921, in his 67th year.

He was elected a Fellow of the Society in 1888.

ROBERTS, DAVID LLOYD, M.D. St And. 1859, F.R.C.P. Lond. 1878, M.R.C.S. Eng., and L.S.A. 1857. Held the following appointments:—Cons. Obst. Phys., Manch. Roy. Infirmary: Phys. St Mary's Hospital, Manch.; Lect. on Clin. Midwf. and Dis. of Women, Owens Coll., Manch. He was a Fell. Med. Soc. Lond.; Mem. Lit. and Philos. Soc. Manch.; late Pres. N. of Eng. Obst. and Gynæcol. Soc.; Vice-Pres. Obst. Sect. Brit. Med. Assoc., and Pres. Manch. Med. Soc., and was the author of the following books:—The Scientific Knowledge of Dante, 1914; The Practice of Midwifery; Cases of Ovariotomy; Clinical Papers; The Various Methods of Treating the Pedicle in Ovariotomy; Edr. Sir Thomas Browne's Religio Medici, etc. He also published papers in the Obstetrical Transactions, and in the Transactions St. And. Med. Grad. Assoc.

Dr Roberts was elected to the Fellowship of this Society in 1880, and died on 20th September 1920.

SPRAGUE, THOMAS BOND, M.A. Camb., LL.D. St Andrews, F.I.A., Hon. F.F.A., was born on 29th March 1830, and was the eldest son of Thomas Sprague of London, Wholesale Stationer. He was educated at Tarvin Hall, a private school near Chester, under the Headmastership of Dr John Brindley. While at school he distinguished himself so much in mathematics that Dr Brindley advised his father to send him to Cambridge, and he accordingly entered St John's College as a Sizar. At the end of his first year he became a Proper Sizar, and in consequence of the excellent places he took in the College examinations, he became in due course a Scholar. In 1853 he was Senior Wrangler and First Smith's Prizeman, and was elected a Fellow of St John's College, and appointed one of the College Lecturers. About this time he qualified in law and was called to the Bar, having in view the law as his future profession. Progress, however, being slow, he sought a career which would be more immediately remunerative, and entered the Eagle Insurance Company in 1855 as a pupil of the late Charles Jellicoe.

After holding some minor appointments, Dr Sprague was, for a short time, Actuary of the then Liverpool and London Assurance Company, until in 1861 he was appointed, at the age of 31, Actuary and Secretary of the Equity and Law Life Assurance Society, with which Society he remained for twelve years. In 1873 he became Manager of the Scottish Equitable Life Office. This involved his removal to Edinburgh. In 1900, after being twenty-seven years Manager of the Scottish Equitable, he retired from active business life. In 1893 the University of Aberdeen conferred on him the degree of LL.D.

Dr Sprague was elected Associate of the Institute of Actuaries in 1856. His first paper is to be found in the Institute Journal, vol. vi, on a certain method of distributing surplus. He was elected a Fellow of the Institute in 1857, and was elected to the Council in 1863. He remained a member until his retirement from business in 1900, a period of thirty-eight years, which is a record. He edited the Journal of the Institute from 1867 to 1883, and the volumes published during his editorship bear witness to his skill and zeal. Elected President of the Institute in 1882, he occupied the Presidential Chair for four years. During his Presidency the Institute received its Charter. In 1874 he was elected a Fellow of the Faculty of Actuaries in Scotland, and was President from 1894–1896. No one else has occupied the Presidential Chairs of both the Institute and the Faculty. He was also President of the Actuarial Society of Edinburgh on three occasions, 1874, 1882, and 1891.

Besides being an Actuary of unusual erudition, Dr Sprague was a firstclass business man. The business of life assurance, using the words "life assurance" in their broadest sense, was the business of his life, and in all his investigations he kept in view their immediate practical application, and refrained from acting on any theories he might have formed until he had put them to practical test. His writings all bear witness to this; and one would like to refer to them in some detail, but in this short notice it is impossible. The communications to the Journal of the Institute alone occupy nearly five and a half pages of the index. Of other actuarial publications special mention may be made of his volume on Life Insurance Accounts (1874); his contributions to the 9th Edition of the Encyclopædia Britannica, particularly an exhaustive article on "Annuities," in some parts highly mathematical, which superseded the article by Joshua Milne written many years before; and sundry contributions to the Transactions of the Actuarial Society of Edinburgh. The construction and use of his monumental Select Tables were fully explained in two elaborate papers to the Journal of the Institute of Actuaries, vol. xxi, p. 229, 1878, and vol. xxii, p. 391, 1881, and in 1896 they were published separately in book form, with extensive monetary tables at four rates of interest. He also took a great part in the preparation of what are now known as the Institute of Actuaries' Life Tables.

Dr Sprague's energies were not confined to matters actuarial. He published various mathematical papers in the *Transactions* and *Proceedings* of the Royal Society of Edinburgh and of the Edinburgh Mathematical Society; and was besides an active member of the Edinburgh Field Naturalists and Microscopical Society, to the publications of which he

made several contributions. A list of these and other papers is given below:—

- "Note on the Probability that a Marriage entered into by a Man above the Age of 40 will be fruitful," *Proc. Roy. Soc. Edin.*, vol. x, 1880, p. 202.
- "On the Nature of the Curves whose Intersections give the Imaginary Roots of an Algebraic Equation," Trans. Roy. Soc. Edin., vol. xxx, 1883, p. 467.
- "On a New Algebra by means of which Permutations can be transformed in a Variety of Ways and their Properties investigated," *Trans. Roy Soc. Edin.*, vol. xxxvii, 1893, p. 399.
- "On the Adjustment of Numerical Results derived from Observation," Brit. Assoc. Report, 1883, p. 446.
- "Note on the Evaluation of Functions of the Form 0°," Proc. Edin. Math. Soc., 1884-85.
- "On the Different Possible Non-linear Arrangements of Eight Men on a Chess Board," Proc. Edin. Math. Soc., 1889-90.
- "On the Transformation and Classification of Permutations," Proc. Edin. Math. Soc., 1890-91.
- "On the Geometrical Interpretation of i," Proc. Edin. Math. Soc., 1893-94.
- "On the Eight Queens' Problem," Proc. Edin. Math. Soc., 1898-99.
- "On the Singular Points of Plane Curves," Proc. Edin. Math. Soc., 1902-03.

The following were communicated to the Edinburgh Field Naturalists and Microscopical Society:—

- "Bones and Shells taken from a Kitchen Midden on Inchkeith during 1881."
- "The 'Green Balls' of Loch Kildonan."
- "On the Growth of Leaves."
- "Fibre Balls."
- "Ripple Marks on Sand."
- "On the Occurrence of the Fresh-Water Mussel."
- "Notes on the Bournemouth Cliffs."
- "Notes on the Entomostraca (Water Fleas) of Midlothian."

Dr Sprague was twice married: first, in 1859, to Miss Margaret Vaughan Steains, younger daughter of Mr James Steains of Liverpool, by whom he had eleven children, eight of whom survive; and second, in 1908, to Miss Jean Elizabeth Stuart of Edinburgh, who also survives him.

He was elected to the Fellowship of the Royal Society of Edinburgh in 1874, and served on the Council from 1885–1887. He died at West Holme, Woldingham, Surrey, on 29th November 1920.

Walker, Robert, M.A. (Aberd. et Cantab.), LL.D., was born in Aberdeen in 1842. He was well known to several generations of students in connection with the part he took in arranging and supervising a number of the more noteworthy functions of the University of Aberdeen, and his services were especially outstanding in connection with the quatercentenary celebrations and the visit of King Edward VII. to open the extension of Marischal College in 1906. The following is a brief résumé of his career:-B.A. (fifteenth Wrangler) at Cambridge in 1865, and in 1868 M.A. Fellow of Clare College, Cambridge, from 1866-1878. He taught mathematics for some time in the Edinburgh Academy, and was examiner in that subject in the Universities of Edinburgh and Aberdeen. In 1877 he was appointed University Librarian at Aberdeen, and in 1893 Secretary to the Aberdeen University Court, Registrar of the University and Clerk of the General Council, which position he resigned in 1906. The following year he received the honorary degree of LL.D. from Aberdeen University in recognition of his valuable services.

Dr Walker was elected a Fellow of the Royal Society of Edinburgh in 1873, and died at Aberdeen on 26th October 1920.

Woods, Geo. Arthur, L.R.C.P. Edin., and L.M. 1868, M.R.C.S. Eng. 1868, L.S.A. 1868 (St Bart.), Hunterian Gold Medal, was the author of the following work:—Anat. Physiol. and Pathol. of the Third, Fourth, and Sixth Nerves, as illustrated by Observation and Experiments in Health and by References to Effects of Injury and Disease (Coll. Trien. Prize, R.C.S. Eng.), and published papers in the Liverpool Medical Surgical Reports, Lancet, International Medical Congress, and the Liverpool M.-C. Journal.

He was elected to the Fellowship of the Society in 1884, and died, after an illness of many years, on 30th June 1921.