Calendar of Scientific Pioneers.

April 21, 1793. John Michell died.—A fellow of Queens' College, Cambridge, Michell became a clergyman, and in 1762 was appointed Woodwardian professor of geology in the University of Cambridge. Magnetism, electricity, and astronomy all engaged his attention, and shortly before his death he devised the apparatus afterwards used by Cavendish to measure the density of the earth.

April 21, 1825. Johann Friedrich Pfaff died.—The friend of Schiller and the rival of Gauss, Pfaff studied mathematics under Kästner and worked at astronomy with Bode. His original researches were mainly in the domain of the calculus and differential equations. Pfaff was born in 1765. From 1788 to 1810 he was professor of mathematics at Helmstadt, and from 1810 onwards held the chair of mathematics at Halle.

April 23, 1874. John Phillips died.—In his youth the constant companion of his uncle, William Smith, the geologist, Phillips held the chairs of geology at King's College, London, at Dublin, and at Oxford. For his contributions to geology and palæontology he received the Wollaston medal from the Geological Society, which he served as president during 1859–60.

April 25, 1840. Siméon Denis Poisson died.—Poisson all his life—first as student, then as professor and examiner—was connected with the Ecole Polytechnique, where he gained the friendship of Lagrange, Laplace, and Legendre. Besides his separate works he published some three hundred memoirs, the chief of which are on the theory of electricity and magnetism and on celestial mechanics. Always working, he replied to one who urged him to rest: "La vie: c'est le travail."

April 25, 1882. Johann Carl Friedrich Zöllner died.—Well known for his investigations in photometry, spectrum analysis, and the constitution of the sun, Zöllner from 1872 was professor of physical astronomy at Leipzig.

April 25, 1914. Eduard Suess died.—Born in London in 1831, Suess was educated at Prague and at Vienna, where at the age of twenty he entered the Imperial Museum. In 1867 he became professor of geology in Vienna University. His great treatise, "Das Antlitz der Erde," which occupied him twenty-five years, was a comprehensive survey of all that had been accomplished in elucidating the geological structure of the earth. He held various public offices, and served as president of the Academy of Sciences of Vienna.

April 26, 1835. Henry Kater died.—Joining the Army as an ensign in 1794, Kater for a time assisted Lambton on the Trigonometrical Survey of India. Placed on half-pay in 1814, he devoted himself to scientific pursuits, and was especially known for his pendulum experiments, his work on weights and measures, and his invention of the floating collimator.

April 26, 1920. Srinivasa Ramanujan died.—Distinguished for his researches in pure mathematics, Ramanujan was the first Indian fellow of the Royal Society. A Brahmin by caste, he was born at Erode in 1887, became a student at Madras University, and was enabled to spend the years 1914–19 in England, where his brilliant work led to his being elected F.R.S. in 1918. He died at Chetput, Madras.

April 27, 1521. Ferdinand Magellan died.—The contemporary of Columbus and Vasco da Gama, Magellan—or Magalhães—came of a noble Portuguese family. Sailing from Portugal in September, 1519, towards the end of 1520 he discovered the strait that bears his name and so reached the Pacific. He met his death in a fight with natives in the Philippines.

E. C. S.

Societies and Academies.

London.

Royal Microscopical Society, March 16.—Prof. John Eyre, president, in the chair.—J. H. **Pledge**: The use of light-filters in microscopy. The advantages gained are: control of contrast in the stained and the coloured preparations from both the visual and the photographic points of view; aid in resolution of fine structure; improvement in the definition given by ordinary achromatic objectives; modification of the unpleasantness to the eye of artificial-light sources by "equivalent daylight" filters; and the possibility of moderating the intensity of illumination of the microscopic field by light-filters of neutral tint of suitable density. Forms of light-filters mostly in use are chiefly dyed gelatine cemented between protecting cover-glasses, but dye solutions in glass-cells are also used. To obtain maximum contrast a light-filter complementary in colour to that of the preparation should be used.

Faraday Society, March 22.—Prof. A. W. Porter, president, in the chair.—Prof. A. W. **Porter**: Presidential address: Some aspects of the scientific work of the late Lord Rayleigh. The experimental part of Rayleigh's work could be divided into that requiring elaborate apparatus and laborious application, and investigations in which the apparatus was of the simplest kind. The latter was a type of investigation in which Rayleigh specially delighted. His mathematical work was always looking forward to its applications. Illustrations were given of the great use he made of the method of dimensions when problems (especially those in hydrodynamics) cannot be yet solved in any other way. His work on intrinsic pressure was outlined and contrasted with more recent work of the Dutch school of physicists. Finally, his mentality was further characterised by references to his excursions into problems dealt with by the Society of Psychical Research. His position was summed up by saying that although Rayleigh founded no school, yet he so advanced knowledge of physics in all its branches as to stand out as one of the leaders in scientific achievement.—S. **Field**: The electrolytic recovery of zinc. Abundant supplies of low-grade and complex ores are available in Great Britain which are not amenable to distillation, but respond readily to electrolytic treatment. Sulphide ores are calcined to oxide and a predetermined proportion of sulphate. The calcine is leached with acid zinc sulphate liquors from the electrolytic cells. Special treatment avoids gel formation, and admits of high extraction and easy filtration. The zinc sulphate solution is too impure for efficient deposition. The methods of purification worked out are given in some detail. Ni and Co constitute two commonly met and insidious impurities. The purified liquors containing not more than 3 to 5 parts Co and 0·2 part Ni per 1,000,000 are acidified and electrolysed between lead anodes and aluminium cathodes. The cells, arranged in cascade, absorb 3·35 volts and give a current efficiency of 90 per cent., representing about 3200 k.w.h. per ton of zinc cathodes. Subsidiary power is amply covered by 800 k.w.h. per ton; 4000 k.w.h. covers all power. At 0·33d. per unit, power costs are 5*l.* 11*s.* per ton of cathode zinc. The cathodes are melted and yield ingots assaying at least 99·95 per cent. of zinc.—Prof. A. **Findlay** and V. H. **Williams**: Note on the electrolytic reduction of glucose. The authors have studied the electrolytic reduction of glucose under varying conditions of temperature, current density, and current concentration, and using both graphite and lead electrodes. No appreciable amount of hexa-