Calendar of Scientific Pioneers.

October 13, 1866. William Hopkins died.—The Cambridge tutor of Tait, Maxwell, Kelvin, and Stokes, Hopkins, in 1850, received the Wollaston medal for his researches on the application of mathematics to physics and geology, and the following year was elected president of the Geological Society.

October 14, 1831. Jean Louis Pons died.—While connected with the observatories at Marseilles, Lucca, and Florence, Pons discovered thirty-seven comets.

October 15, 1907. Maurice Loewy died.—Born in Vienna, of Jewish parentage, and trained under Littrow, Loewy was invited to Paris by Leverrier in 1860. In 1896 he succeeded Tisserand as director of the Paris Observatory. He completed the great Paris catalogue of stars, and energetically supported the International Photographic Chart. The first equatorial coudé was erected by him in 1882.

October 16, 1793. John Hunter died.—A great comparative anatomist and the founder of the famous Hunterian collection, Hunter for many years was one of the surgeons of St. George's Hospital, London. Interred in St. Martin's-in-the-Fields, his remains, through the efforts of Frank Buckland, were transferred in 1859 to Westminster Abbey.

October 16, 1876. Wolfgang Sartorius, Baron von Waltershausen, died.—After carrying out magnetic work in various parts of Europe, von Waltershausen made a study of Mount Etna, and in 1858–61 published his "Atlas des Ätna." For about thirty years he held the chair of mineralogy at Göttingen.

October 17, 1757. René Antoine Ferchault de Réaumur died.—For nearly fifty years a prominent member of the Paris Academy of Sciences, Réaumur has been called the Pliny of the eighteenth century. His investigations on the cementation of steel were of great practical importance. As a naturalist he is best known for his "Mémoires pour servir à l'Histoire des Insectes," 1737–48.

October 17, 1887. Gustav Robert Kirchhoff died.—While professor of physics at Heidelberg, Kirchhoff, in 1859, by a comparison of the solar spectrum with the spectra of various elements, created spectrum analysis. Assisted by Bunsen in 1861, he discovered cæsium and rubidium; his map of the solar spectrum was published by the Berlin Academy shortly afterwards.

October 18, 1871. Charles Babbage died.—Sometime Lucasian professor of mathematics at Cambridge, Babbage was a founder of the British Association, and of the Astronomical and Statistical Societies. With Herschel, Peacock, and Woodhouse he was one of the reformers of mathematical studies at Cambridge. For more than thirty years he spent much time and money on elaborate calculating machines, which, never completed, are now in the Science Museum at South Kensington.

October 19, 1875. Sir Charles Wheatstone died.—A pioneer worker on the transmission of electricity, Wheatstone, in 1834, became professor of experimental physics at King's College, London, and afterwards with Fothergill Cooke played an important part in the development of the electric telegraph. He also did valuable work in acoustics.

October 19, 1906. Friedrich Konrad Beilstein died.—German by birth but Russian by nationality, Beilstein was widely known for his researches on the aromatic series and on petroleum, and for his "Handbuch der Organischen Chemie," a work of reference held in high esteem. E. C. S.

Societies and Academies.

PARIS.

Academy of Sciences, September 26.—M. Léon Guignard in the chair.—A. **de Gramont** and G. A. **Hemsalech**: The *rôle* of electrical actions in the emission and appearance of certain types of lines of the magnesium spectrum. A detailed account of the variations in the lines produced by changing the conditions under which the arc or spark is maintained. The arc was struck between magnesium electrodes under water, glycerol, and petroleum, and the sparks were passed in atmospheres of hydrogen, oxygen, coal gas, and nitrogen. During the first phase of the arc struck in a liquid drop, modifications of the lines are caused by the intense electric fields.—L. **Casteels**: A type of doubly continuous quadratic generation of a plane cubic given by nine simple points.—T. **Varopoulos**: Some properties of increasing functions.—J. **Chazy**: The Poisson stability in the problem of three bodies.—J. **Guillaume**: Observations of the sun made at the Lyons Observatory during the first quarter of 1921. Observations were taken on seventy-seven days in the quarter, and the principal facts are resumed in three tables; showing the number of spots, the distribution of the spots in latitude, and the distribution of the faculæ in latitude.—K. **Ogura**: The static field of gravitation.—E. **Hulthen**: The combinations in band spectra.—M. and L. **de Broglie**: The corpuscular spectra of the elements. A statement of experimental results on the corpuscular excitation of the heavy metals (uranium, thorium, lead), by the X-rays, and bearing on the L, M, and N levels of electrons.—E. **Passemard**: The alluvial terraces of Sebou above Fez. There is clear evidence of the existence in the Sebou valley of three terraces, 30 metres, 16 metres, and 7 metres. The higher terraces have certainly existed, but are now represented by *débris*.—A. **Lumière** and H. **Couturier**: Sodium oleate in the phenomena of shock. When a 1 per cent. solution of sodium oleate is injected into the jugular vein of sensitised guinea-pigs, it is known that these animals can stand, without inconvenience, an injection of the antigen which is mortal to a sensitised animal not treated with the oleate solution, and this protective action has been attributed to the property possessed by sodium oleate of diminishing the surface tension of liquids to which it is added. The authors do not accept this explanation, and show that solutions of sodium oleate alone can produce the symptoms of anaphylactic shock. These symptoms can be suppressed by solutions of sodium hyposulphite.

BRUSSELS.

Royal Academy of Belgium, June 4.—M. G. Cesaro in the chair.—A. **Demoulin**: The minimum surface of Enneper.—Cl. **Servais**: A group of three biological Caylean tetrahedra.—M. **Stuyvaert**: The theorems of Fermat and Euler.—H. **Kufferath**: The stereogrammatic interpretation of the sporulation curve of yeasts, described by Hansen. Its application to physiological and biological phenomena. The author has repeated and extended the observations of Hansen on the sporulation of yeasts. The medium used differed from that of Hansen, and the rate of growth was much slower, but the results fully confirm those of Hansen, as regards the average time of the first proof of the existence of spores at varying temperatures.—P. T. **de Chardin** and C. **Fraipont**: The presence in the lower tertiary of Belgium of a member of the Hyopsodus group.—J. **Errera**: Contribution to the knowledge of the cuprous compounds. Experimental evidence is given of the existence of cuprous