THE *Chemical Age* announces that the trustees of the Ferguson Bequest Fund have unanimously approved the appointment of Mr. Henry Hyman to be the first Ferguson fellow for research in applied chemistry. The fellowship is of the annual value of 200*l.* for two years, and the research may be carried out at Glasgow University, the Royal Technical College, or elsewhere, as the fellowship committee may direct.

THE proprietors of the *Practical Engineer*, by arrangement with the International Correspondence Schools, are offering a scholarship in mechanical engineering of the value of 30*l.* The scholarship, which is open to subscribers to that periodical of all ages and both sexes, will be awarded to the candidate submitting the best essay on "Why I would Choose an Engineering Career To-day." Full particulars may be obtained from the *Practical Engineer* offices, 8 Breams Buildings, Chancery Lane, E.C.4.

THE British Federation of University Women is giving practical expression to its belief in international ideals by the offer of a travelling fellowship, value 300*l.*, which is open to members of all national federations of university women forming branches of the International Federation. The fellowship will be tenable for the academic year 1922–23, the main condition being that research or post-graduate study shall be undertaken in some country other than that in which the fellow has received her previous education or habitually resides. Full particulars can be obtained from the Secretary, British Federation of University Women, 73 Avenue Chambers, Vernon Place, W.C.1.

Calendar of Scientific Pioneers.

December 29, 1731. Brook Taylor died.—Educated at Cambridge and a man of means, Taylor was devoted to the arts and sciences, served as secretary to the Royal Society, and in 1715 published his "Methodus Incrementorum Directa et Inversa," a treatise dealing with the calculus of finite differences and containing the important theorem which bears his name.

December 30, 1644. Johann Baptista van Helmont died.—A student of medicine at Louvain, van Helmont settled on his estate near Brussels. Though imbued with the superstitions of his day, he was a careful experimenter, and is remembered for his early researches on various gaseous substances.

December 30, 1691. Robert Boyle died.—The son of an Irish earl, Boyle devoted his life to the advancement of science and the spread of religion. He made numerous additions to physics and chemistry, and his name is perpetuated by the well-known Boyle's law, discovered by him in 1662 and independently by Mariotte about 1676.

December 31, 1719. John Flamsteed died.—The first of a long line of distinguished Astronomers-Royal, Flamsteed began his observations at Greenwich on October 29, 1676, the erection of the observatory being directly due to the need for improving the means of finding the longitude at sea. Flamsteed investigated the fundamental points of astronomy and formed a catalogue of 2935 stars, but his "Historia Cœlestis" was not published in its complete form until 1725.

December 31, 1868. James David Forbes died.—For twenty-seven years professor of natural philosophy at Edinburgh, Forbes was best known for his researches on heat and on glaciers. Like Brewster, he was one of the founders of the British Association.

E. C. S.

Societies and Academies.

LONDON.

Geological Society, December 7.—Mr. R. D. Oldham, president, in the chair.—S. S. **Buckman**: Jurassic chronology: II., Preliminary studies. Certain Jurassic strata near Eype's Mouth (Dorset): the junction-bed of Watton Cliff and associated rocks. A detailed section is recorded of a white lithographic bed in Watton Cliff which shows faunal inversion. The dating of this bed is discussed, and a theory of stratal repetition and coalescence is discussed. Its main date is taken to be Yeovilian, *Hammatoceras hemera*. The white lithographic bed of Burton Bradstock is cited as evidence of stratal repetition, and a theory as to its deposition and partial destruction is put forward. Both beds are cited as evidence of Alpenkalk conditions prevailing in western Europe at two well-separated Jurassic dates, both of them earlier than the times of Alpenkalk deposits in central and eastern Europe. A new species of rhynchonellid from a deposit at Thorncombe Beacon is described.—J. **Stansfield**: Banded precipitates of vivianite in a Saskatchewan fireclay. The pale grey Tertiary fireclay worked for firebricks contains bluish-black patches, the central portions of which are deeply coloured and usually surrounded by a uniformly stained area or by several concentric stained layers of varying tint. The colour is due to an amorphous variety of vivianite, formed presumably by precipitation brought about by iron-solutions reacting on solutions of phosphates of organic origin, such solutions being brought together by diffusion through the colloidal clay. The spacing of the vivianite-bands is irregular, and appears to follow no known law.

Optical Society, December 8.—Mr. R. S. Whipple, president, in the chair.—L. C. **Martin**: The physical meaning of spherical aberration. Experimental determination of the intensity of light near the focus of a lens system shows that the "spurious disc" appearance persisted at the best visual focus, even with large amounts of aberration. Increasing the aberrations draws light from the central concentration and scatters it in the surrounding field; from measurements of the loss the necessity of restricting the phase residuals to within $\lambda/6$ is inferred. Spherical aberration produces marked asymmetry on each side of the focus.—F. L. **Hopwood**: An auto-stroboscope and an incandescent colour top. The production of a variety of stationary dark images, due to the eclipse of an incandescent wire by an adjacent cold wire or opaque object when both are revolving about a common axis, was described. The phenomena might be practically applied to the study of the behaviour of a rotating body by converting it into an auto-stroboscope.—J. W. **Gifford**: Achromatic one-radius doublet evepieces. Eyepieces both of the Huygenian and the Ramsden types have been constructed from pairs of one-radius achromatic doublets with external plane surfaces to the flint lenses. They compare well with the German orthoscopes in definition, while the cost of production, since the same radius serves for each doublet, or in the case of the Ramsden throughout, is sensibly less. Such eyepieces are adapted either for the telescope or the microscope. By their use a more perfect achromatism is obtained, and also in both of them a flat field, very extensive in one case, likely to be useful in such operations as counting blood corpuscles, etc.

Association of Economic Biologists, December 9.—Sir David Prain, president, in the chair.—J. H. **Priestley**: The resistance of the normal and injured plant-surface to the entry of pathogenic organisms. When the protective surface of the flowering plant is injured the