University and Educational Intelligence.

CAMBRIDGE.—The title of Girdlers lecturer in economics has been conferred on Mr. G. F. Shove, of King's College. Mr. H. H. Nicholson, of Selwyn College, has been appointed University lecturer in agricultural chemistry.

The following elections have been announced:—To an Isaac Newton studentship, founded for the encouragement of study and research in astronomy and physical optics, value £250 a year for three years: R. van der Riet Woolley, of Gonville and Caius College, formerly of the University of Cape Town, who was a wrangler with mark of distinction in the Mathematical Tripos of 1928; to additional Isaac Newton studentships, tenable in each case for one year: V. V. Narliker, Non-Coll., and L. C. Young, Trinity.

At the annual general meeting of the Cambridge Philosophical Society held on Oct. 27, Prof. F. J. M. Stratton was elected president, and the following new members of the council were elected: Mr. J. W. Landon, Dr. E. D. Adrian, Mr. F. Debenham, and Mr. W. R. Dean.

NOTICE is given by the Chemical Society that applications for grants from the research fund of the Society must reach the assistant secretary, on prescribed forms, by at latest Dec. 1. Applicants are reminded that the income arising from the donation of the Goldsmiths' Company is to be more or less especially devoted to the encouragement of research in inorganic and metallurgical chemistry, and that the income from the Perkin Memorial Fund is to be applied to investigations relating to problems connected with the coal tar and allied industries.

THE Association of University Teachers has as one of its objects the promotion of exchanges of opinion not only between the universities of Britain but also between them and the universities of other nations. To further this aim, a short visit to French universities was recently organised with the cordial and very efficient help of M. Desclos, of the Office National des Universités et Écoles françaises. Fifteen members of the Association took part in the visit, which embraced the three universities of Paris, Lille, and Dijon. A report of facts elicited in the course of their investigations, with an account of some of their impressions and inferences, is published under the title "The French University System" in the October number of *The Universities Review*, issued by the Association, price 2*s*. This gives, in thirty pages, an informative and interesting conspectus of the university in relation to the State; the relation of the university to the general system of education; the university in relation to the cultural and economic life of France and other countries; the constitution and establishment of the university; university finance; staffing; student life and work; and courses and examinations. The report brings out some instructive comparisons and contrasts. At the head of each of the seventeen regional units, known as 'académies', in which the administration of public instruction in France is organised, stands the 'Recteur de l'Université'. Of this functionary the report observes that his duties comprise those of vice-chancellor, principal, president, and treasurer of the university, and in addition those of local director of education, member of the university grants committee, and official of the board of education. "Formidable and even autocratic as the authority of the Recteur may appear to be, we found that university dependence on the State entailed far less sacrifice of educational freedom than we were inclined to expect."

Historic Natural Events.

Nov. 9, 1883. Brilliant Sunset in England.—About ten minutes before sunset, the sky being very clear and a deep blue except for a few fleeces of cirro-cumulus nearly overhead, the sun turned unusually white and descended in a slight haze, with curious greenish white and yellowish white opalescence in the upper part. About 15 minutes after sunset the sky turned a brilliant but delicate pink, beneath which a shining green and white opalescence hung like a luminous mist. The effect grew with increasing darkness, and lit up the landscape, although the moon was shining brightly. The horizon, remained deep red until nearly 6 P.M. These remarkable sunsets, and similar effects at sunrise, were visible throughout the winter, and were due to the dust thrown into the air by the explosive volcanic eruption of Krakatoa, on Aug. 26–28, 1883.

Nov. 11, 1099. Storm in the North Sea.—A violent storm at high tide flooded the coasts of Holland and England as far as Kent, including the Thames Estuary. It is said that 100,000 persons lost their lives.

Nov. 11, 1572. Nova Cassiopeiæ.—On this date, Tycho Brahe at his observatory at Uraniborg saw that a new star, surpassing the other stars in brilliancy, had appeared in the constellation Cassiopeia. At first the nova was as bright as Venus at its maximum brightness and could be seen by keen-sighted people near midday. It then slowly declined, but in February and March 1573 it was still as bright as the first magnitude stars; by February 1574 it had reached the sixth magnitude, and by the end of March it ceased to be visible to naked-eye vision. There were accompanying changes in the colour of the nova—from white to yellow, then to a reddish hue, and lastly it became "like lead, somewhat like Saturn". Measurements of its position convinced Tycho Brahe that "this star is not some kind of comet or a fiery meteor . . . but that it is a star shining in the firmament itself—one that has never previously been seen before our time, in any age since the beginning of the world". Pliny records that Hipparchus is said to have observed a new star; since that of 1572, there have been thirteen bright novæ discovered the most notable being those of 1604, 1901, and 1918.

Nov. 12, 1236. Inundations in East of England.—The sea burst out with such high tides and tempests of wind that the marsh countries were drowned and overflowed, and great herds and flocks perished, besides many persons. The sea rose continuously for two days and one night without ebbing, owing to the great violence of the wind. At Wisbech and neighbouring villages many people were drowned, one hundred in one village.

Nov. 14–15, 1574. Aurora.—Stow records in his "Annals" that there "were seen in the Air strange Impressions of Fire and Smoak to proceed forth of a black Cloud in the North towards the South . . . the next Night following, the Heavens from all parts did seem to burn marvellous ragingly, and over our Heads the Flames from the Horizon round about rising did meet, and there double and roll one in another, as if it had been in a clear Furnace".

Nov. 14, 1854. "Balaclava" Storm.—The British and French fleets and transports lying outside Balaclava Harbour, in the Black Sea, were wrecked and scattered by a violent gale, accompanied by rain which afterwards turned to snow. The loss of stores caused intense suffering among the allied troops in the severe winter which followed. The course of this storm across Europe was afterwards studied by the

French astronomer Leverrier, as a result of which he organised the international exchange of telegraphic weather reports and the first storm-warning service in Europe.

Nov. 14, 1866. Meteor Shower.—The occurrence of notable meteor showers in November 1799 and in November 1833 led to the prediction of a recurrence on a similar scale in 1866 on Nov. 14. Expectations were realised and a shower began about 11 P.M. on Nov. 13, culminated in a wonderful display between 1 and 2 A.M. on Nov. 14, and died away about 4 A.M. As the shower progressed, the radiant point in Leo was ascending above the eastern horizon. In brightness great numbers of the meteors equalled first magnitude stars, many were as bright as Jupiter, and some exceeded Venus at its brightest. It was estimated from systematic counts made by observers that at the height of the display about 6000 meteors were seen in one hour.

Nov. 14, 1923. Floods in Northern England.—On Nov. 12 and 13 a deep barometric depression passed north of Ireland and across Scotland along the line of the Caledonian Canal. The south-westerly gales in Lancashire were associated with heavy rains on the Pennines. On Nov. 14 the Mersey overflowed its banks, the floods at Sale being the most severe on record. At Sale Priory the water was 11 ft. deep, at Clitheroe 300 houses were flooded, and at Bury fire engines had to be called to pump the water out of houses.

Nov. 15, 1905. Aurora Borealis.—A remarkable display of aurora borealis was seen in all parts of the British Isles between 6 and 9.30 P.M. At Epsom, according to Mr. Spencer Russell, it first became visible in the north at 7.30 P.M., a narrow arc of pale yellow spanning the horizon. "Frequent displays of rays and streamers were noticed rising and falling rapidly from the arc, their colour varying from pale pink to a blood-red crimson. By 8.55 P.M. the aurora had extended considerably and was of an irregular form, a most noticeable feature being the variability in colour, fading at times to a pale subdued pink, brightening up with a peculiar twitching movement to a deep crimson." The display was very brilliant in the west of Europe—so much so that at Ghent and Turnhout in Belgium alarms of fire were raised. It is noteworthy that in Scotland the aurora appeared to the south of the zenith, in southern England to the north.

Societies and Academies.

PARIS.

Academy of Sciences, Sept. 29.—**E. L. Bouvier**: A new type of ceratocampian Saturnioid.—**Mlle. Marie Charpentier**: The Peano points of a differential equation of the first order.—**Paul Montel**: Some consequences of Rolle's theorem.—**A. Rosenblatt**: Linear equations with total differentials.—**Miron Nicolesco**: The extension of the theorem of Gauss to harmonic functions of p order.—**Podtiaguine**: The upper limit of the canonical product of infinite order.—**L. Escande** and **M. Teissié-Solier**: The chronophotographic study of the flow [of a fluid] round a plate normal to the current. The velocity measured on the surface of discontinuity is constant and equal to the velocity at infinity, agreeing with that indicated by theory. The velocities found esperimentally at various points give a law of retardation in good agreement with the theoretical law.—**L. Goldstein**: The principle of exclusion and intramolecular statistics.—**Pierre Chevenard** and **Albert Portevin**: The secondary tempering of hyper-tempered steels and the stability of austenite.—**Jean Lugeon**: Simultaneous investigation by atmospherics at Zurich and in the Sahara. On the basis of three years' records, the following conclusion can be drawn: out of every 100 atmospherics recorded in a year, 20 per cent are of distant origin, some thousands of kilometres; 70 per cent have a range of between 100 and 1000 kilometres; 10 per cent are local, with a range of less then 100 kilometres. The Kennelly-Heaviside layer is always higher at El-Golea (Sahara) than at Zurich.—**Jean Piveteau**: Contribution to the study of the fossil Ganoid fishes: the family of the Catopterideæ.—**Louis Baudin**: The variation of the respiratory exchanges of fishes as a function of the barometric pressure. By experiments at Lausanne and at Concarneau it has been established that fish are very sensitive to changes in the barometric pressure, and this sensibility is measured by large differences in the gaseous exchanges and in the respiratory coefficient.

Oct. 6.—The president announced the death of Paul Wagner, *correspondant* for the Section of Rural Economy.—**J. Costantin**: The phytopathological guarantees of non-degenerescence of the potato in North America. Since 1922 the author has recommended the use of seed potatoes collected in cold countries or in the mountains. Further support of this view has been obtained from results in America and Canada. The climate probably acts in limiting the extension of disease, in facilitating the selection of healthy individuals, and perhaps in suppressing disease.—**Paul Helbronner**: The polar aurora of Sept. 3, and on its action on radio-telegraphic transmissions. A list of wireless communications interrupted by this aurora is given.—**Léon Guillet, Jean Galibourg, and Marcel Ballay**: Thermal treatment hardening grey cast irons.—**E. Bataillon** and **Tchou Su**: The reaction peculiar to the egg in *Hyla*. Perivitelline and infertility of the hydrated virgin material.—**A. Buhl**: Wave geometry. Propagated waves and integral invariants.—**P. Rachevsky**: Sub-projective spaces.—**B. Kagan**: Sub-projective spaces.—**H. Chapiro**: Sub-projective spaces.—**V. Romanovsky**: A class of linear integral equations.—**Mezin**: The kinematics of the elements of lines and surfaces applied to meteorology.—**E. Coupleux** and **Givelet**: An electric organ. An outline of an entirely new type of instrument, based on the triode valve.—**A. Bogros**: The saturated vapour pressure of lithium.—**Charles Platrier**: The broadcasting in France of the landing of the aviators Costes and Bellonte in the United States.—**Nicolas G. Perrakis**: The influence of the developer on the properties of a photographic plate. A quantitative study of the action of two different developers, other variables being maintained as constant as possible.—**A. Kastler**: The Raman effect in liquids possessing rotatory power. The molecular asymmetry shown in the transmission of light (rotatory power) and in its absorption (circular dichroism) does not appear in the Raman diffusion spectra.—**A. P. Rollet** and **L. Andrès**: The alkaline pentaborates.—**J. Fromaget** and **J. H. Hoffet**: The extension of the littoral facies of the upper Devonian and the palæogeography of northern Indo-China.—**E. Saurin**: The existence of post-Lias granites in Cochin China and South Annam.—**A. Loubière**: The intranucellar vascularisation of the Trigonospermales.—**Ad. Davy de Virville**: The existence of an unnoticed zone of vegetation on the coast of the Armorican massif: the *Caloplaca marina* zone.—**H. Lagatu** and **L. Maume**: The explicit reply of leaf diagnosis when other means of observation fail.