

confirms the results of Blaauw that the light of a mercury vapour lamp or direct sunlight acting for a period of 1/2000th second is sufficient to produce a stimulus. Mr. F. Kölbl, describing his experiments on the heliotropic sensibility of woody plants, notes that shrubs are more sensitive than trees.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Honorary degrees will be conferred this term upon Sir Oliver Lodge, F.R.S., principal of the University of Birmingham, and Prof. W. H. Perkin, F.R.S., professor of organic chemistry in the Victoria University of Manchester.

Mr. K. J. J. Mackenzie has been appointed university lecturer in agriculture for five years as from January 1, 1910.

Dr. T. Percy Nunn, vice-principal of the London Day Training College, will give a lecture on psychology and some problems of education on Friday, May 13, at Gonville and Caius College. The lecture will be open to all interested in the subject.

OXFORD.—The Romanes lecture for 1910 will be delivered in the Sheldonian Theatre on Wednesday, May 18, at 2.30 p.m., by the Hon. Theodore Roosevelt, ex-President of the United States of America. The subject chosen by Mr. Roosevelt is "Biological Analogies in History." Lord Curzon of Kedleston, Chancellor of the University, will preside.

The first Halley lecture, established "in honour and memory of Edmund Halley (sometime Savilian professor of geometry in the University and Astronomer Royal) in connection with his important contributions to cometary astronomy and to our knowledge of the magnetism of the earth," will be delivered on Tuesday, May 10, at 5.30 p.m., in the University Museum, by the founder, Dr. Henry Wilde, F.R.S. The title of the lecture is "On Celestial Ejectamenta."

DR. E. J. GODDARD, Linnean Macleay fellow in zoology, Sydney, has been appointed by the council of Stellenbosch College, South Africa, to the chair of zoology and geology in succession to Prof. R. Broom.

THE thirty-seventh annual dinner of old students of the Royal School of Mines will be held on Thursday, May 26, at the Hotel Cecil. The chair will be taken by Sir Thomas H. Holland, K.C.I.E., F.R.S.

A COURSE of eight lectures on "The Chief Animal and Vegetable Pigments" will be delivered in the Physiological Institute (University College) of the University of London on Fridays during May and June, commencing on Friday, May 6, by Dr. S. B. Schryver. The lectures are open to all students of the University, and also to all qualified medical men and other persons who are specially admitted.

In an article in the current number of the *Oxford and Cambridge Review*, Mr. John C. V. Bevan, formerly Rhodes scholar and fellow of University College, Oxford, combats a statement which has been circulated that there is no return to the countries which send Rhodes scholars to Oxford. It appears that, of eighty-two Americans, eighty-one have returned home, while one has accepted a university appointment in England. Of fifteen Germans, fourteen have returned to the Fatherland, and one has gone to America. Seventy-eight colonials have completed their tenure as Rhodes scholars; fifty-one have already returned to their colonies; twelve are completing a further course of study before they return; three have obtained appointments in India; two in colonies other than their own; two in foreign countries; one is temporarily engaged in parochial work in this country; four have accepted teaching posts in English universities, but are hoping to secure professorial appointments in their own colonies; three only have decided definitely to settle in England.

A REPORT as to the disposal of the balance of the grant to university colleges of 100,000l. for 1909-10, and as to changes in the list of participating colleges, has been sent to the Treasury by the advisory committee on the grants. The report, together with Treasury Minutes thereon, has

been printed and circulated as a Parliamentary Paper (110). The committee has already recommended the payment to the recognised colleges of general grants for the year 1909-10 on the same basis as in the two preceding years, and it now recommends the payment of further grants to thirteen colleges, varying in amount from 2000l. to Victoria University, Manchester, to 500l. to University College, Reading. The committee has had under consideration whether any new colleges should be added to the list of those which participate in the Treasury grants. Special attention has been given to the claims of Hartley College, Southampton; Royal Albert Memorial College, Exeter; East London College; and Birkbeck College, London. The committee recommends in regard to Hartley College, Southampton, that it shall not remain permanently on the list of university colleges in receipt of Treasury grants, and that its grant, reduced to 1500l., shall be continued for the year ending March 31, 1911, but no longer. The committee has felt unable to recommend the award of a Treasury grant to the Royal Albert Memorial College, Exeter, and Birkbeck College. It recommends, however, that the East London College be awarded a grant subject to conditions set forth in the report, and will consider at what amount the grant for the quinquennium beginning with the year 1910-11 shall be fixed. The Treasury has concurred in the committee's recommendations, and will give effect to them.

Two fellowships, to be known as the "A.K. Travelling Fellowships," are to be established in the British Isles by M. Albert Kahn, of Paris, for the purpose of providing selected persons with *bourses de voyage* to enable them to travel in foreign countries. Each fellowship is to be of the value of 660l. This sum is to be expended by each fellow as to 600l. in defraying his travelling expenses, and as to 60l. in the purchase of books and souvenirs. The only condition which each fellow is required to fulfil is that he shall, at the expiration of his fellowship, prepare a report containing his impression of the countries he has visited. It is the desire of the founder that these travels shall be used as an opportunity of acquiring knowledge and experience which will be of use to the fellows in their future careers as teachers, scholars, or investigators. M. Kahn has arranged that his intentions shall be carried out by a board of trustees, consisting, in the first instance, of the Lord Chancellor, the Lord Chief Justice, the Speaker of the House of Commons, the principal of the University of London, Lord Avebury as nominee of the founder, and a sixth person to be elected by the other trustees. From an article in the *Times* it appears that the trust is to be associated permanently with the University of London, and this has been carried into effect by the principal of that University being appointed as one of the trustees. He will also act as the honorary secretary to the trust, and the office through which the trust will be administered will be in the University building. The trustees have been instructed to invite nominations from the Vice-Chancellor or other executive head of each of the universities in the United Kingdom, from the president of the Royal Society, and from the president of the British Academy, although they are not required to confine their election to the persons so nominated.

LAST September Dr. A. D. Waller, F.R.S., delivered an address to the University of California, and the substance of it is published in the current issue of *Science Progress* as an article entitled "The University of London and an Imperial Institute of Science." Dr. Waller directed attention to the immediate future of the University and to some of the first principles that determine the healthy university in the healthy community. Incidentally, he pointed out that it is upon the combination between teaching and research, and not upon their separation, that the intellectual welfare of a community and of an individual depends. The best guide to any district of knowledge is the man who has been there himself as an explorer or as a pioneer. Discussing university research fellowships, he maintains that no condition of life is more enviable than that of a keen-brained man during the best ten years of intellectual life, from, say, the age of twenty-five to that of thirty-five, in receipt of a salary of 200l. for teaching during half the week and of a fellowship of 200l. for "researching" during the other half. Under such conditions of life the return

in teaching power will repay the outlay in money, and that from among the workers thus supported the exceptional man will be far more likely to emerge than is the case now. The practical measures by which it is possible to give effect to this dual principle in London are such as would at the same time constitute an intercollegiate bond of union formed by the university between its colleges, schools, and institutions through its faculties and boards of studies. The formation of this bond of union should consist in the foundation of an Imperial Institute of Science and Learning, of which the present Imperial Institute building should be the home and headquarters, and its *personnel* select panels of university research fellows. Such panels should consist of professors, recognised and probationary teachers, and other distinguished persons in London, in the United Kingdom, and in His Majesty's Dominions beyond the Seas, selected and nominated by boards of the faculties appointed by the university.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 28.—Sir Archibald Geikie, K.C.B., president, in the chair.—R. B. **Sangster**: The rotatory character of some terrestrial magnetic disturbances at Greenwich and on their diurnal distribution. The paper commences with an investigation of the changes in direction of the line of total magnetic force at Greenwich on 1903 October 12d. 18h. to 23h., when a considerable magnetic disturbance was in evidence. Measurements of the published registers of all three force components were made at equivalent time intervals of about five minutes, whence is obtained a diagram showing the variation of the force component perpendicular to the line of total force. The diagram shows there was an almost wholly rotatory motion of the transverse disturbance vector, the trace consisting of six distinct convolutions varying greatly in size, but consistent in anticlockwise progression. Several other disturbances during epoch 1900-7 are examined in detail, and it is shown that a right- or left-handed rotatory character in the motion of the disturbance vector was of fairly frequent occurrence, while change from left to right not uncommonly occurred about midnight. It was also found that the same direction of rotation often persisted for several hours, and tables of the diurnal distribution of right- and left-hand rotatory disturbance are furnished to show that those of right-hand character were entirely absent during the hours 4 p.m. to 9 p.m., while, meantime, the left-handed rotations were very prevalent, and reached a notable maximum at 8 p.m. Other points in the diurnal distribution are noted, including the more decided effect resulting from a seasonal grouping of the seventy disturbed days dealt with.—D. Orson **Wood**: The liberation of helium from minerals by the action of heat. Experiments were made to determine how the volume of helium liberated from radio-active minerals by the action of heat depends on the temperature, and on the time for which that temperature is maintained, in particular with the view of the future use of heat to release all the helium contained in minerals not easily treated by chemical methods. The minerals experimented on were monazite and thorianite, the one comparatively poor and the other very rich in helium. The ground minerals were heated, *in vacuo*, in tubes of Jena glass or quartz, by an electric heater consisting of a single coil of nickel wire, to temperatures up to 1200° C., which were measured by a Pt resistance thermometer or a Pt Pt-Rh thermocouple. The gas released was purified by drawing it through KOH and P₂O₅ tubes, and finally by Na-K electrodes. The volume was measured in a modified McLeod gauge (described by Prof. Strutt, *Proceedings*, vol. lxxx.) specially constructed for the measurement of volumes over a large range—1 c.c. to 1 c.mm. Curves are given to show the volume of helium liberated with time at constant temperatures (250°-1000° C.), and also the percentage of the total content obtainable after prolonged heating at the different temperatures. The way in which the gas must be supposed to be retained within the mineral to accord with the results obtained is discussed, and it is concluded (1) that heat may be used for the complete liberation of the gas if a sufficiently high temperature (about 900° C.) is

reached, and (2) that the results are in agreement with the supposition that a small proportion of the gas is diffused through the mineral and that the remainder is concentrated in very minute cavities within it.—Prof. Swale **Vincent**: The chromophil tissues and the adrenal medulla. The author gives an account of the gross anatomy and histology of the chromophil tissues in mammals, and especially in the dog. Descriptions and drawings of the groups of cells in the sympathetic ganglia and of the chromophil bodies in other regions are furnished, and comparisons are made between their structure and that of the adrenal medulla. An extract of the abdominal chromophil body of the dog has precisely the same powerful effect upon the blood pressure as an extract made from the medulla of the adrenal. There seems no reason why one cannot admit the hypothesis that all the chromophil cells have an internal secretion, though this process is more completely elaborated in the larger chromophil bodies and in the adrenal medulla.

Royal Anthropological Institute, April 12.—Sir Herbert Risley, K.C.I.E., president, in the chair.—S. Hazzledine **Warren**: Charcoal burning in Epping Forest. The industry was carried on near Chingford in 1908 and 1909, but has since been given up. The structure of the burners' hut was quite on prehistoric lines. The technical terms used by the burners are also survivals, many of them being Anglo-Saxon or French.—N. F. **Roberts** and H. C. **Collyer**: Additional notes on the British camp at Wallington. The authors described the excavations made when buildings were being erected on the site of the camp, no vestige of which was apparent until the ditch of the camp was cut through in the course of digging foundations, the whole area having at some time been levelled for cultivation. Numerous objects were exhibited which had been recovered from the ditch, including stone implements, mealing stones, loom weights, spindle whorls, and large quantities of pottery, including drinking cups and cooking pots, some of which contained charred grain. Some traces of bronze were found, including a bronze fibula, pointing to the date of the camp having been of early Iron age, possibly about 50 B.C. Some of the stone implements were considered to be of foreign manufacture, and although most of the pottery was very coarse, and probably made locally, a portion of it was evidently imported from Gaul. Particular attention was directed to some perforated tiles, which had apparently been used as "grids," one actually having been found lying near a cooking pot upon a hearth at the bottom of the ditch. Similar tiles had not previously been found in Great Britain. An amber bead showed probable intercourse with Scandinavia. In the ditch itself there was no trace of Roman or Romano-British pottery, although a small quantity of such ware was found in the humus which lay above the original land surface, and which had been washed or carried down by the plough from the higher ground. The authors considered that the camp had been destroyed or abandoned about the time of the Roman entry into London. The camp, which covered several acres, had apparently held a considerable population, which practised weaving and the potter's art, cultivated grain, and possessed, or at all events consumed, the ox and horse, the bones of which were associated with those of boar and wolf or dog.

Royal Meteorological Society, April 20.—Mr. H. Mellish, president, in the chair.—R. G. K. **Lempfert** and R. **Corless**: Line squalls and associated phenomena. A line squall is usually associated with the displacement of an air current moving from south-west by a colder current from north-west. The authors investigated the phenomena associated with several well-marked line squalls, and showed by maps with isochronous lines the direction of front and the rate of advance of the various storms across the country.

Linnean Society, April 21.—Dr. D. H. Scott, F.R.S., president, in the chair.—Miss M. G. **Sykes**: The anatomy of *Welwitschia mirabilis* in the seedling and adult stages. The development of the ridges bearing inflorescences has been studied. On the whole, the investigation has served further to confirm the impression of the aberrant nature of the plant; it may, indeed, be described as an "adult seedling."—Prof. P. **Stein**: Die von Mr. Hugh Scott im