

### University and Educational Intelligence.

**BELFAST.**—Dr. James Small, lecturer on botany in Bedford College, London, and in the London School of Pharmacy, has been appointed professor of botany in succession to Prof. Yapp.

**CAMBRIDGE.**—It has already been announced that a friend of Girton College has given 10,000*l.*, to be applied, both capital and interest, during the next twenty years for the encouragement of research by women in mathematical, physical, and natural sciences. We now learn that a fellowship of the value of 300*l.* a year is offered by the college for research in such sciences as chemistry, electricity, engineering, botany, geology, medicine, agriculture, etc. The election of the fellow will take place in time to permit of the award by the council being made not later than June 30. Women who are graduates or have taken honours in a final degree examination of any university, and members of the Girton College Roll, are eligible for the fellowship. The fellow will be elected for three years in the first instance. Applications for the fellowship must be sent to the secretary of the college on or before March 31. Each candidate should describe a course of research and submit a dissertation or published work, in addition to any other evidence she may desire to furnish of her fitness to undertake the proposed course of research.

**LONDON.**—The Senate has received two letters from Viscount Haldane of Cloan, chairman of the Sir Ernest Cassel Educational Trust, offering important gifts in connection with the new degrees in commerce. The trustees offer an endowment of 150,000*l.* in War Loan, producing 7500*l.* a year, for the provision of eight, or possibly more, teaching posts in banking and currency, foreign trade, accountancy and business methods, transport and shipping, industrial organisation, and commercial law, and propose that these should include three Sir Ernest Cassel professorships in banking and currency, foreign trade, and accountancy and business methods respectively. They further suggest that the teaching in all the above-named subjects should be given at the London School of Economics, it being understood that accommodation for increased teaching is to be provided in the new buildings now being erected at the school, with the assistance of the sum of 50,000*l.* recently given by the General Committee for Degrees in Commerce, on the new site granted by the London County Council. The trustees also offer to allot to the University an annual grant up to 3000*l.* a year, for five years in the first instance, for the provision of additional instruction in the following modern languages required to meet the needs of students in commerce: French, German, Spanish, Portuguese, Italian, Russian, and Arabic, together with a further sum of 1000*l.* for the current year to meet the expenditure on additional modern-language instruction incurred during this year. They also place at the disposal of the University a sum of 1000*l.* a year, in the first instance for five years, for travelling scholarships for the benefit of students in commerce. The offers have been accepted by the Senate, and the Vice-Chancellor has been asked to convey to Sir Ernest Cassel and to the chairman of the Cassel Trust "the warmest thanks of the Senate for these great gifts for the cause of education, from which they anticipate the most fruitful results."

Dr. James McIntosh has been appointed as from March 1 to the University chair of pathology tenable at the Middlesex Hospital Medical School. During the war Dr. McIntosh carried out investigations at the Royal Herbert Military Hospital, Woolwich, on cerebro-spinal fever, and at the London Hospital on

gas-gangrene. For the last nine months he has been a full-time investigator on the staff of the Medical Research Committee. Dr. McIntosh is the author of numerous reports and other articles in medical and scientific journals.

Dr. Sidney Russ has been appointed as from March 1 to be the first incumbent of the Joel chair of physics tenable at the Middlesex Hospital Medical School. The work of this professorship, recently established by the munificence of Messrs. S. B. and J. B. Joel, will deal especially with physics in relation to medicine. From 1906 to 1910 Dr. Russ was demonstrator in physics at the University of Manchester, and was appointed physicist to the Middlesex Hospital in 1913. He is the author of a large number of articles and other papers dealing with radio-activity and other aspects of medical physics.

The following have been appointed fellows of University College:—Mr. F. J. F. Barrington, assistant surgeon, Surgical Unit, University College Hospital; Mr. W. C. Clinton, assistant professor in the department of electrical engineering and Sub-Dean of the college faculty of engineering; Miss Ethel M. Elderton, Galton research fellow in the department of applied statistics and eugenics; Dr. T. H. C. Stevenson, superintendent of statistics at the General Register Office, and fellow and joint secretary of the Royal Statistical Society; and Dr. Ethel N. Thomas, lecturer in the department of botany, and keeper of the department of botany in the National Museum of Wales.

The degree of D.Sc. (Economics) has been conferred on Mr. W. Rees, an internal student, of the London School of Economics, for a thesis entitled "An Agrarian Survey of South Wales and the March, 1284-1415."

On Wednesday next, March 10, at 5.30 p.m., Lord Moulton will deliver an address at University College on "The Training and Functions of the Chemical Engineer." Prince Arthur of Connaught will preside.

**OXFORD.**—The King has been pleased to approve of the appointment of Sir Archibald E. Garrod, K.C.M.G., F.R.S., to be Regius professor of medicine in the University in succession to the late Sir William Osler, Bart.

The fellowship diploma of the Royal College of Science for Ireland has been awarded to Mr. Hugh Ramage and Mr. R. L. Wills.

MR. W. D. EGGAR will deliver a course of four public illustrated lectures on "Optics" at Gresham College, Basinghall Street, E.C.2, at 6 o'clock, on March 9, 10, 11, and 12, in place of the course announced for delivery by the Gresham professor of geometry, who is suffering from illness.

The Master and fellows of Corpus Christi College, Cambridge, propose to elect in July next a holder of the Almeric Paget studentship in political science, economics, and kindred subjects. The studentship is of the value of 150*l.*, and tenable for one year. Applications should be addressed to Mr. W. Spens, Corpus Christi College, Cambridge, by, at latest, July 1.

The next of the series of lectures for teachers on "Recent Developments in Science," arranged by the Education Officer of the London County Council, will be on "The Dye Industry," by Prof. G. T. Morgan, and will be delivered at Finsbury Technical College, Leonard Street, City Road, E.C.2, on Saturday, March 20, at 11 a.m. The chair will be taken by Dr. M. O. Forster.

H.R.H. PRINCE ARTHUR OF CONNAUGHT will preside on March 19 at a luncheon to be held at the Savoy

Hotel, when the proposals for the reconstruction and re-equipment of the engineering laboratories at University College, London, will be explained by the treasurer, Sir Ernest Moir, and others. It will be remembered that an appeal for 100,000*l.* towards this object was recently issued. Already more than 33,000*l.* has been collected—that is, about one-third of the total sum required. It is urgently necessary that the whole fund should be subscribed by June at the latest, in order that the buildings may be put in hand. Further donations should be sent to H.R.H. Prince Arthur of Connaught at 42 Upper Grosvenor Street, W.1.

IN *School Hygiene* (vol. xi., No. 1, February) Dr. A. A. Mumford puts forward an interesting scheme for the investigation and standardisation of the physical efficiency of children which is characterised by the breadth of view we should expect from the author of the "History of the Manchester Grammar School." Grading his subjects in six age-groups from two to eighteen, he indicates the materialistic tests which are appropriate. A boy of about thirteen, for example, should be able to run 100 yards in 14 seconds; for the oldest boys Flack's manometer test of expiratory force is of value. But realising, as medicine has come to realise more and more in recent years, the influence of the mind on the body, he emphasises the necessity of studying the emotional incentives to be found in the imagination, and would have the school medical officer pay attention to sulkiness as much as to adenoids. In the discussion of the paper Dr. Lempriere, of Haileybury, describes the quick, practical utility of height-weight ratios as indices of physical progress. Athletes are taller and heavier than the average, "crocks" shorter and lighter; it is, perhaps, characteristic that nothing is said about the physical qualities of the scholars and dunces.

### Societies and Academies.

LONDON.

**Royal Society**, February 19.—Sir J. J. Thomson, president, in the chair.—B. Moore and T. A. Webster: Studies of photosynthesis in fresh-water algæ. (1) The fixation of both carbon and nitrogen from the atmosphere to form organic tissue by the green plant-cell. (2) Nutrition and growth produced by high gaseous dilutions of simple organic compounds, such as formaldehyde and methyl alcohol. (3) Nutrition and growth by means of high dilutions of carbon dioxide and oxides of nitrogen without access to atmosphere. The primeval living organism, like the inorganic colloidal systems which were its precursors, must have possessed the power of fixing carbon and nitrogen, and building these up into reduced organic compounds with uptake of energy. The source of the energy was sunlight. This power is still possessed by the lowliest type of synthesising cell existing, namely, the unicellular alga. A synthesising cell must have existed prior to bacteria and other fungi, since these can exist only upon organic matter, and the primeval world before the advent of life could contain no organic matter. Their specific reactions show that even the ultra-microscopic filter-passing organisms are highly organised products on the path from the inorganic towards life, and hence it follows that there is a long intermediate range of evolution. The first synthesising system acting upon light was thus probably an inorganic colloidal system in solution, capable of adsorbing the simple organic substances which it synthesised. It is therefore futile to search for the origin of life at the level of bacteria and torulæ.

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As complexity increased with progressive evolution, more and more rapid transformers for the capture of the energy of sunlight came into existence. Such transformers are found in the green cell for fixation of both carbon and nitrogen. The earlier transformers in the inorganic colloidal systems can only utilise light of short wave-lengths; the later transformers in the living cells are adapted to utilise longer wave-lengths; and the very short wave-lengths, which are lethal, are cut off by their colour-screens of chlorophyll, etc.—W. M. Bayliss: The properties of colloidal systems. iv.: Reversible gelation in living protoplasm. With intense dark-ground illumination it is possible to see that the apparently clear pseudopodia of *Amœba* are filled with numerous very minute particles in Brownian movement, thus affording further evidence of the liquid, hydrosol nature of simple protoplasm. By electrical stimulation this sol can be reversibly changed into the gel state, evidenced by the sudden cessation of the Brownian movement.—F. J. Wyeth: The development of the auditory apparatus in *Sphenodon punctatus*. This memoir contains a detailed and fully illustrated account of the development of the auditory apparatus and associated structures in the New Zealand Tuatara. As this important type is on the verge of extinction, it was thought desirable to treat the subject fully, although, as might be expected, the developmental history agrees closely with that found in other reptiles. The work was carried out chiefly by means of wax-plate reconstruction models. The third and fourth visceral clefts are closed by a backwardly growing operculum, but separate dorsal and ventral openings of the clefts were not observed. The existence of two pairs of head-cavities was confirmed, those of each pair communicating with each other by transverse canals. The vascular system was found to exhibit a number of primitive features. The region investigated includes cranial nerves vi.-xii., the development of which was worked out in detail. The general development of the internal ear and auditory nerve is thoroughly normal. The development of the cristæ and maculæ acusticæ from the primitive neuroepithelium is given in detail. A well-marked macula neglecta is found. As regards the much-debated question of the origin of the columellar apparatus, evidence is brought forward in support of the contention that this is essentially a derivative of the hyoid arch, and it is maintained that the auditory capsule contributes at most a portion of the foot-plate of the stapes.

**Linnean Society**, February 19.—Dr. A. Smith Woodward, president, in the chair.—Major H. C. Gunton: Entomological-meteorological records of ecological facts in the life of British Lepidoptera. The author believed that interesting facts would be obtained by recording and plotting the results of observations made by a number of entomologists in various localities. The scheme exhibited was derived from his notes from February to December, 1919, within a radius of four miles from Gerrard's Cross, Bucks, which includes oak and beech woods, heath, marsh, and cultivated land. Special signs are used to denote the occurrence of species of macro-Lepidoptera on sallow-bloom in the spring, ivy in the autumn, sugar, and light. Thirty-five species of butterflies and two hundred and forty species of moths are thus tabulated and correlated with meteorological data. The diagram places many facts before the eye, as the long continuance of certain species, the presence of more than one brood, and the like. Sugar scarcely appeals when honey-dew is abundant, and artificial light is ineffective during bright moonlight. Other problems, as of immigration, still await solution.