

### Experimental Cell Studies.

IN an experimental study of cell and nuclear division, especially in *Vicia faba*, Sakamura (Journ. Coll. Sci., Imp. Univ. Tokyo, vol. xxxix., article 11) has made an important contribution, particularly with regard to the factors that may influence the form, size, and number of the chromosomes. He finds, in agreement with most previous investigators, that *V. faba* has twelve chromosomes, the earlier counts of fourteen being due to a constriction which appears constantly at a certain point on the longest pair of chromosomes. Two other species of *Vicia* have fourteen chromosomes, three have twelve, while *V. unijuga* is tetraploid, having twenty-four.

The investigations of Nemec and others in chloralising root-tips and studying the effects on mitosis and the multiplication of chromosomes have been considerably extended, including treatment with benzene and chloroform vapour, ether, carbon dioxide, high temperature, electric currents, Röntgen rays, plasmolysis, and infection by the Nematode worm *Heterodera*. The chromosomes often shorten and thicken under this treatment, irregular mitoses occur, and frequently the number of chromosomes is multiplied, but there is no evidence of later reduction divisions in the pollen formation were also obtained by similar treatment.

A study of the chromosomes of wheat gives very different results from those of previous investigators. *Triticum monococcum* is found to have fourteen chromosomes ( $2\times$ ), four derivatives of Emmer wheat are found to have twenty-eight ( $4\times$ ), while three descendants of Dinkel wheat have forty-two ( $6\times$ ). This is a confirmation of the view that *T. monococcum* is the most primitive, while *T. vulgare* belongs to the most advanced, type—a view which is supported also by the phytopathological studies of Wawiloff, the serological tests of Zade, and the evidence from sterility of the various hybrids as obtained by Tschermak. The fundamental importance of cytological studies of agricultural plants is thus apparent.

R. R. G.

### University and Educational Intelligence.

CAMBRIDGE.—Mr. H. H. Brindley, St. John's College, has been re-appointed demonstrator of biology to medical students; Mr. J. T. Saunders, Christ's College, demonstrator of animal morphology; and Mr. J. Gray, King's College, demonstrator of comparative anatomy. Mr. E. J. Maskell, Emmanuel College, has been appointed to the Frank Smart University studentship in botany.

Graduate research studentships at Emmanuel College have been awarded to E. J. Maskell for research in plant physiology, to C. H. Spiers for research in stereochemistry, and to G. L. Jones for research in Celtic and Frankish institutions.

DR. GRIFFITH TAYLOR, at present physiographer in the Commonwealth Weather Service, Melbourne, has been appointed to a specially created position of associate professor of geography in the University of Sydney. He will take up the duties of his new position in the early part of 1921.

A REUNION of old students of the Royal College of Science, London, will be held on Tuesday, September 14, at 7 p.m., at the Imperial College Union, Prince Consort Road, South Kensington, London, S.W.7. The president, Sir Richard Gregory, will take the chair at 8 p.m., and Prof. H. E. Armstrong will

deliver an address entitled "Pre-Kensington History of the Royal College of Science and the University Problem."

THE issue of the *Lancet* for August 28 is a medical students' guide for the session 1920-21. The various curricula are described in detail, and under their respective headings the necessary information concerning the facilities for medical study offered at the different teaching centres of the United Kingdom is given. The regulations for the examinations, both preliminary and professional, at these centres are set out so that the student desiring to obtain a medical degree from a university or a diploma from any medical corporation may ascertain the course of clinical instruction and the conditions under which submission for examination is allowed. The metropolitan medical schools and hospitals are grouped under the University of London; similarly, all hospitals in direct connection with provincial universities are described under the appropriate university. Finally, an account is given of the conditions under which commissions can be obtained in the Navy, Army, Air Force, Indian, and Colonial Medical Services.

WE have just received a "Handbook of Lectures and Classes for Teachers," issued by the London County Council. The range of subjects offered is very wide, and all the courses will be conducted by experts. Under the heading of geography, lectures will be given on physical geography, the use of instruments, and regional and historical geography—a course which will extend over two years. In addition, there will be lectures on the past and the future of the great towns of the world, and one lecture on regional surveys. In the department of mathematics the teaching of arithmetic, of mensuration and geometry in junior schools, and of elementary mathematics will be dealt with in five courses of lectures during the year. Science will be represented by courses of lectures on modern theories of time, space and matter, psychoanalysis, psychology, elementary astronomy, the special senses, experimental investigation of children, the industries of the Stone age, insects in relation to agriculture and disease, and laboratory arts, and there will be one lecture on insects as disease-carriers. As usual, there will be a course of single lectures on special subjects: Prof. J. N. Collie will lecture on the rare gases in the atmosphere; Prof. A. Fowler on recent developments in astronomy; Prof. A. Keith on the antiquity of man; Prof. R. Biffen on agricultural botany; Dr. Bateson on the heredity of sex; Dr. Forster on chemical technology; and Sir W. H. Bragg on the romance of science. The lectures will be open to all teachers employed either within or outside the administrative county of London. Full directions for the application for tickets of admission will be found in the handbook.

### Societies and Academies.

PARIS.

Academy of Sciences, August 9.—M. Henri Deslandres in the chair.—A. Blondel: A new optical or electrical apparatus for the measurement of oscillations of velocity and angular deviations. The method is based on the registration on a photographic film moving at a uniform rate of the angular displacements of a disc carrying a series of equidistant slits, the disc being attached to the axis of the machine under examination. An application of the method to the study of an internal-combustion engine is given.—M. Petot: Extract from a letter to M. Appell con-