

Paris Academy of Sciences.

BONAPARTE AND LOUTREUIL FUNDS.

GRANTS for research from the Bonaparte and Loutreuil funds have been allocated as follows: *Bonaparte Fund*.—Six applications have been examined and two grants are recommended:

(1) 5000 francs to the Association lyonnaise pour le développement des recherches de paléontologie humaine et de préhistoire, for carrying on excavations in the celebrated prehistoric deposits of Solutré.

(2) 2000 francs to Charles Le Morvan for completion of the publication of the systematic and photographic map of the moon.

Loutreuil Fund.—Thirty-one applications were considered and grants were recommended as follows:

(1) The National Museum of Natural History: 8000 francs to Désiré Bois for the publication of the first two parts of a guide to the collections of cultivated plants at the museum.

(2) The central council of observatories: 1000 francs to the National Observatory of Besançon for the acquisition of an Abraham oscillograph; 3000 francs to Auguste Lebeuf, for the purchase of an oven required for researches relating to the simultaneous action of temperature and pressure on chronometers, for aviation purposes.

(3) Council for the improvement of the École polytechnique: 6000 francs to Alfred Perot, for the construction of an apparatus designed for the verification of a formula given by the Russian physicist, W. Michelson.

(4) National Veterinary School of Alfort: 1600 francs to the school, which, together with balance of 8000 francs remaining from the sum granted in 1920, is allotted as follows:—5000 francs to Adrien Panisset and Jean Verge, for researches on the chemicotherapy of the infectious diseases of domestic animals; 2000 francs to Edouard Bourdelle and André Rochon-Duvignaud, for researches on vision in animals; 2000 francs to Albert Henry and Charles Leblois, for researches on the etiology, pathogeny, and treatment of parasitic cutaneous affections of domestic animals; 600 francs to Gabriel Petit, for the purchase of a microscope.

(5) National Veterinary School of Lyons: 4000 francs to François Maignon, for the continuation of his researches on organozymotherapy and for a study of the physico-chemical constitution of the diastases and the mechanism of their action; 4000 francs to Joseph Basset, for the purchase and feeding of experimental animals required for testing two new methods of producing immunity; 2000 francs to G. Marotel, to allow him to continue his researches on the treatment of mange in the dog by a new method.

(6) National Veterinary School of Toulouse: 2500 francs to Charles Besnoit for an experimental study of the methods of intensive application applicable in bovine surgery, and for printing a phototype catalogue for general use; 2000 francs to Jean Lafon, for completing the previous grant of 3000 francs for the purchase of an Einthoven string galvanometer; 1000 francs to Charles Hervieux to enable him to pursue his researches on the transformation in the animal organism of pyrrol groups contained in food, and the elimination of these groups by the urine; 1000 francs to Charles Besnoit and Victor Robin, for a study of the contagious diseases of poultry in the S.W. region.

Independent Grants.—1000 francs to Julien Achard, for completing his monograph on the Madagascan coleoptera of the family of Scaphideidae; 6000 francs to the Association amicale des élèves de l'École nationale supérieure des Mines for a study of the methods and apparatus for the control of combustion,

especially as regards the estimation of carbon dioxide in flue gases; 5000 francs to the École supérieure de perfectionnement industriel as a contribution to the expenses of this institution; 2000 francs to Wilfred Kilian to assist the publication of a geological bibliography of the south-east of France; 5000 francs to Emmanuel de Margerie, for the preparation of the publication of a tectonic map of Eurasia; 15,000 francs to Jean Mascart, for the publication of a part of the astronomical work of Luizet; 3000 francs to M. Mugnier-Serand for his researches on atmospherics in wireless telegraphy and their application to the prediction of storms; 15,000 francs to the Academy of Sciences for the publication of the catalogue of scientific periodicals in Paris libraries.

University and Educational Intelligence.

BIRMINGHAM.—The twenty-third yearly meeting of the Court of Governors is to be held on February 8, and a summary of the events of the past academic year will be presented in the reports of the council and principal (Mr. C. Grant Robertson). The number of students during the past session showed a slight falling off, and the proportion of women increased, except in the Faculty of Medicine, in which it was lower than it had been for some years. It is hoped to repeat, during the present session, the post-graduate course on "The Medical Aspect of Crime and Punishment," for qualified practitioners, which was given last year by Drs. Maurice Nicolls (lecturer in psychotherapy), Hamblin Smith, W. A. Potts, and Percy T. Hughes. Sir Frederick Mott has been appointed, for three years, lecturer in morbid psychology. A Board of Research in Mental Diseases, on which the University and the Asylums Committee of the City Council are represented, has been formed. Sir Frederick Mott is honorary director of research, and the funds are being supplied by the Asylums Committee of the City Council. The most urgent need of the University at present is the removal of the biological group of sciences to new buildings at Edgbaston. This would set free room at Mason College which is urgently required for the Faculties of Arts and Medicine. Reference is made to the successful work of the Workers' Educational Association, and the importance of the co-operation of the University in that work:—"It is essential that the educational work should be controlled by the Universities, if only to secure the right standard . . . , and the need of additional qualified University instructors . . . is already apparent."

Mr. A. W. Nash has been appointed senior lecturer in petroleum technology under Prof. R. R. Thompson. Mr. Nash has had experience in petroleum production and refining in Persia, Russia, and other parts of the world.

CAMBRIDGE.—Sir Alfred Yarrow has offered money for a three-year studentship in Assyriology to provide for the training of a suitable student in a subject which has for the time vanished from the University. He and Lady Yarrow further offer, "if the student prove himself a competent scholar and is prepared to continue the study of Assyriology," to establish with a stipend of 500*l.* a year an "Eric Yarrow lectureship for the study of Assyriology" in memory of Sir Alfred's son, who fell in the war.

A new University lectureship in Psychopathology is advertised as vacant.

Prof. Zschokke, head of the faculty of zoology in the University of Basle, will lecture this term on the European fauna.

The governing body of Emmanuel College offers to a research student commencing residence at the

College in October 1923, a studentship of the annual value of 150*l.*, which shall be tenable for two years and renewable, but only in exceptional circumstances, for a third year. The studentship will be awarded at the beginning of October, and applications should be sent so as to reach the Master of Emmanuel, The Master's Lodge, Emmanuel College, not later than September 18.

LONDON.—The Senate has resolved to increase the annual grant to the Marine Biological Association, Plymouth, from 25*l.* to 50*l.* for the next five years.

The following doctorates have been conferred:—*D.Sc. in Embryology*: Mr. G. S. Sansom, an internal student, of University College, for a thesis entitled "Early Development and Placentation in *Arvicola (Microtus) amphibius*, with special reference to the Origin of Placental Giant Cells." *D.Sc. in Physiology*: Dr. G. V. Anrep, an internal student, of University College, for a thesis entitled "The Metabolism of the Submaxillary Gland."

Dr. Eustace E. Turner has been appointed demonstrator in the chemical department of the East London College.

ST. ANDREWS.—Principal J. C. Irvine, Dr. William Low, and Dr. Angus MacGillivray have been appointed representatives of the court of the University on a standing joint-committee constituted by the court and the directors of the Dundee Royal Infirmary for the purpose of recommending suitable candidates on the occurrence of vacancies in the chairs of clinical medicine in the University, and also of harmonising the activities of the University and the Infirmary in matters common to both. Prof. D'Arcy Thompson has been reappointed representative of the court on the council of the Scottish Marine Biological Association.

MAJOR-GEN. SIR GERALD ELLISON will unveil the war memorial of East London College on Wednesday, February 7, at 3 P.M.

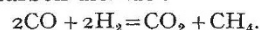
A SWEDISH professor of education, contrasting Swedish and American schools, remarked that in his own country the word "teacher" is not a noun feminine as it is in America. That the criticism is not without some foundation is shown by the statistics published in Bulletin, 1922, No. 8, of the United States Bureau of Education. The number of men students enrolled in normal courses in all normal schools and teachers' colleges in 1919-20 was 19,110 out of a total of 135,418, or 14 per cent; in teachers' colleges the percentage was 18, in state normal schools 13, in city and county normal schools 6, and in private normal schools 9. Comparative tables of statistics of the five years 1899-1900, 1904-5, 1909-10, 1914-15, and 1919-20 give the numbers of women students in normal courses as 45,394, 49,346, 68,815, 80,347, 116,308, representing the following percentages of the total numbers of students in such courses: 65, 76, 78, 80, 86. The teachers' colleges referred to, 46 in number, are institutions having a four-year course above the secondary school and granting a degree. Of the total number of men students in normal courses (19,110), more than half (9763) were enrolled in these colleges. It is true that a very large proportion of the teachers in American schools have not passed through normal schools and that the percentage of men teachers is not necessarily the same as the percentage of men students in teacher-training institutions. Statistics of City School Systems 1919-20 (Bulletin, 1922, No. 17), however, tell a similar tale. They show that the percentage of men teachers in city schools (including schools in towns having a population of 2500 or more) is 11, while in city elementary schools the percentage is only 4. It is probably safe to assume that rural schools would show an even lower percentage.

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Societies and Academies.

LONDON.

Royal Society, January 25.—Sir Charles Sherrington, president, in the chair.—A. V. Hill: The potential difference occurring in a Donnan equilibrium and the theory of colloidal behaviour. Loeb has shown experimentally that there is a potential difference between a colloidal solution of a protein and a crystalloid solution with which it is in equilibrium across a membrane, impermeable to the protein, but permeable to the other bodies involved. It varies in the same general manner as the osmotic pressure, the viscosity and the swelling. The variation can be deduced, in general, from the theory of the Donnan equilibrium. One of the chief arguments employed by Loeb, however, is incorrect. Loeb shows that the potential difference observed experimentally agrees very exactly with that "calculated" from the difference in hydrogen ion concentration, also observed experimentally. This is a necessary consequence of the manner in which the observations were made.—E. F. Armstrong and T. P. Hilditch: A study of catalytic actions at solid surfaces. X.: The interaction of carbon monoxide and hydrogen as conditioned by nickel at relatively low temperatures. A practical synthesis of methane. A mixture of equal volumes of carbon monoxide and hydrogen passed over nickel at temperatures 220-280° C. was largely transformed into methane and carbon dioxide:



This action affords the simplest and most economical means of producing methane in quantity, since a suitable gas mixture exists in ordinary commercial water-gas when the latter has been freed from catalyst poisons by removal of sulphur compounds. The experimental data obtained are compatible with a combination of the "water-gas reaction" with the normal hydrogenation process. Thus, of two volumes of water-gas ($2\text{CO} + 2\text{H}_2$), one molecule of carbon monoxide and a molecule of water interact and yield a molecule each of carbon dioxide and of hydrogen, the latter, with the balance of hydrogen present in the original gas, furnishing sufficient hydrogen for the normal hydrogenation of a second molecule of carbon monoxide.—J. Holker: The periodic opacity of certain colloids in progressively increasing concentrations of electrolytes. The method of testing the effect of common salt on the typical emulsoid colloid, serum, was described. Into each test-tube was pipetted 0.5 c.c. of undiluted serum and to each was then added 2 c.c. of solution of sodium chloride, which progressively increased in concentration in each successive tube. The tubes were shaken and placed in a thermostat at 40° C. for four hours. Then the opacity of the solution was determined. The phenomenon is periodic and is given by colloids of both the emulsoid and suspensoid type, and by animal, vegetable, and mineral colloids. It is also given by certain mixtures of simple aqueous solutions of inorganic salts. Emulsoid colloids tend to give many oscillations of low amplitude. Suspensoid colloids tend to give few oscillations of high amplitude. The phenomenon is not an optical interference of the light scattered by colloidal particles, but is a definite oscillatory change in the physical condition of those particles.—E. K. Rideal and R. G. W. Norrish: The photochemistry of potassium permanganate. Pt. I: The application of the potentiometer to the study of photochemical change. Pt. II.: On the energetics of the photodecomposition of potassium permanganate. The electrode potential of potassium permanganate when illuminated with ultra-violet light from the mercury vapour lamp undergoes a change (*ca* 0.25 volt) and