

THE Eugenics Education Society has arranged for the holding of a summer school of eugenics and civics at Herne Bay College on July 31-August 14. The inaugural address will be delivered by Prof. A. Dendy on "Evolution in Human Progress," and there will be lectures and discussions on heredity, biology, eugenics, and sociology. The address of the society is 11 Lincoln's Inn Fields, W.C.2.

A SUMMER school of civics is to be held, under the auspices of the Civic Education League, at the Technical Institute, High Wycombe, Bucks, on July 31 to August 14. There are to be lectures on maternity and child welfare work, analytical psychology, and reconstruction problems; and courses on civics, sex education, local and central government, and anthropology have been arranged for. Further particulars can be obtained from the Secretary, Summer School of Civics, Leplay House, 65 Belgrave Road, S.W.1.

An important American academic change is announced in the simultaneous resignations of Dr. G. Stanley Hall as president of Clark University and of Dr. Edmund C. Sanford as president of Clark College, and the appointment of Dr. Wallace W. Atwood as single head of both the University and the college. Dr. Atwood has been professor of physiography at Harvard since 1913, and is at present in the West in charge of a field expedition for the U.S. Geological Survey. In addition to his executive position, he will occupy the chair of regional and physical geography at Clark University. Dr. Stanley Hall is retiring in order that he may devote his whole time to the completion of several books on psychology which he has had in hand for a considerable period. Dr. Sanford will take the chair of psychology at Clark University, which Dr. Stanley Hall is vacating together with the presidency.

We learn from *Science* that the following appropriations have recently been made by the U.S. General Education Board:—To the Washington University Medical School, St. Louis: For endowment, 250,000*l.*; for additional laboratory facilities and equipment, 14,000*l.* To Yale Medical School: For endowment (towards a total of 600,000*l.*), 200,000*l.* To Harvard Medical School: For improved facilities in obstetrics, 60,000*l.*; for the development of teaching in psychiatry, 70,000*l.* To Johns Hopkins Medical School: For development of a new department of pathology (towards a total of 120,000*l.*), 8000*l.* From the same source we learn that the Rockefeller Foundation has made appropriations as follow:—To Dalhousie University Medical School, Halifax: For buildings and equipment, 80,000*l.*; for endowments, 20,000*l.* To the Medical Research Foundation of Elisabeth, Queen of the Belgians, Brussels: For general purposes of medical research, 1,000,000 francs.

THE frontier between school and university has recently been the subject of much discussion. The Prime Minister's Committee on Science recommended that eighteen should be the normal age of entry from secondary schools to the universities, and in making that recommendation it was supported by all the witnesses who gave evidence on the subject. The Board of Education, by its efforts to standardise the Second School Examinations, and by watching the advanced courses given in schools, has done much to direct the studies of those who really are in the post-matriculation stage while at school; and the universities are faced, more than ever before, by the problem of how to arrange for students who enter with wide differences of attainment. There is but one solution: elasticity of organisation, both in the matter of examinations and in that of prescribed courses.

During the past year a consultative council, on which were representatives of seven universities and four associations of school teachers, has been formed by the Association of Science Teachers in order to discuss the overlapping of school and university training. As a result, a resolution was sent to the various universities urging them "to recognise the value of the post-matriculation work in efficient schools by accepting the passing in subjects in one of the approved Second School Examinations as exempting from the corresponding subjects in the Intermediate Examination and the first Medical Examination of the University." The Association of Science Teachers is to be congratulated on organising the discussions which have led to this expression of opinion by a body well constituted to view the situation from opposite sides.

Societies and Academies.

LONDON.

Faraday Society, June 14.—Prof. A. W. Porter, vice-president, in the chair.—Dr. A. Fleck and T. Wallace: Conduction of electricity through fused sodium hydrate. The resistance to the passage of current through fused caustic soda and its rate of change with temperature have been examined by a direct-current method. In view of the difficulties of containing the soda in a non-conducting non-porous vessel, the experiments have been carried out in the centre of a large mass of soda. The decomposition voltage has been studied and found to be a variable quantity, decreasing at the rate of 2.25×10^{-3} volts per degree Centigrade rise in temperature. This figure differs from the previously published figure of 2.95×10^{-3} . It has been found that when a current is passed through fused sodium hydrate between two sodium electrodes the current is always proportional to the applied E.M.F.—Dr. H. F. Haworth: The measurement of electrolytic resistances using alternating currents. An electrolytic cell acts like a capacity in series with a resistance. If this capacity and resistance be measured at various frequencies, they will be found to vary with the frequency. If the impedance of the cell is plotted vectorially with respect to the resistance for various frequencies, the locus is a straight line which cuts the resistance axis at infinite frequency. This gives the true resistance of the electrolyte.—J. L. Haughton: The measurement of electrical conductivity in metals and alloys at high temperatures. The study of the electrical conductivity of alloys has generally been carried out by measuring the conductivity of the alloys at room-temperature and plotting a curve connecting conductivity with composition, but much valuable information can be obtained by plotting the curve connecting the composition and temperature and using a series of such curves in the same way as the ordinary thermal curves. The paper describes a method which can be employed for this.—N. V. S. Knibbs and H. Palfreeman: The theory of electro-chemical chlorate and perchlorate formation. This paper is the outcome of a study of the electrolytic formation of chlorate and perchlorate based on recent large-scale operations. It aims at a presentation of the theory of the mechanism of chlorate and perchlorate formation and its application to their technical production. A series of investigations was undertaken in order to elucidate a number of doubtful points and to obtain data which were of importance in the technical control of the process.—J. B. Firth: Sorption of iodine by carbon. The sorption of iodine by carbon was studied over a period of five years; the forms of carbon used were lamp-black, blood carbon, sugar carbon, animal carbon,

coconut carbon from shell, and coconut carbon from fruit. The solvents used were chloroform and benzene. The activity of the carbon was shown to depend on its previous treatment. In all cases a rapid condensation takes place in the first few minutes, followed by a much slower sorption, which may continue for several years. The influence of the size of the carbon particles was also studied.—**F. H. Jeffery**: Electrolysis of solutions of sodium nitrite using a copper anode.—**Dr. A. M. Williams**: The pressure variation of equilibrium constant in dilute solution. The apparent discrepancy between the expressions of Planck and Rice rests on a misinterpretation of the latter's symbols. Another deduction is given.—**Miss Nina Hosali**: Models illustrating crystalline form and symmetry.

Linnean Society, June 17.—**Dr. A. Smith Woodward**, president, in the chair.—(The centenary of the death of Sir Joseph Banks.)—**Dr. B. Daydon Jackson**: Banks as a traveller.—**Dr. A. B. Rendle**: Banks as a patron of science.—**J. Britten**: Banks as a botanist.—**Dr. A. Smith Woodward**: Banks as a trustee of the British Museum of paramount power.

June 24.—**Dr. A. Smith Woodward**, president, in the chair.—**Dr. C. J. F. Skottsberg**: Botanical features of the Juan Fernandez group of islands.—**Dr. R. J. Tillyard**: The Cawthron Institute. This institute is to be situated in the city of Nelson, N.Z. An account was given of the early life and adventures of the founder, showing how he rose from a low estate to become a very wealthy man. In his later years he busied himself with philanthropic enterprises, and on his death it was found that he had left the greater portion of his fortune for the purpose of founding an institute of scientific research. After all claims had been paid, the Cawthron Trust was left with a capital of about 200,000*l.*, which, wisely invested, would yield an income of about 11,000*l.* a year. **Prof. T. H. Easterfield**, of Wellington, N.Z., has been appointed director and chief of the chemical department, with **Mr. T. H. Rigg**, late of Rothamsted, working under him as agricultural chemist. In the biological department **Miss K. M. Curtis** has been appointed mycologist, and **Mr. A. Philpott** assistant entomologist. The library and museum are under the care of the curator, **Mr. W. C. Davies**. The activities of the institute will be directed towards scientific research, both pure and applied, with the view of benefiting the primary industries of New Zealand as a whole and of the Nelson Province in particular.

Aristotelian Society, June 21.—**Mr. A. F. Shand** in the chair.—**Miss Edgell**: Memory and conation. The views of three writers approaching the subject from the different viewpoints of philosophical psychology, biology, and psychiatry, viz. **Prof. Ward**, **Dr. Semon**, and **Dr. Freud**, were examined with reference to the question: Does memory require the recognition in mental life of a specific function, conation? Analysis shows that for **Prof. Ward** the activity of the subject of experience is essential both for the development of memory and for many of its manifestations. If the activity of the subject be understood as implying conation, then the author's theory of memory does involve conation. **Dr. Semon**, following **Hering** and **Butler**, regards memory as a function of all organic matter and its laws as laws of organic life. Nevertheless, in dealing with human memory **Semon** recognises "vividness" in imagery as essential for memory and association. Vividness is distinguished from intensity and made to depend on attention. The relation of attention to the laws of organic life is still obscure, and attention is treated as if it were an original force. The rôle of conation in the psychology of **Dr. Freud**

is all-important. It is the conation of unconscious wish which is regarded as explanatory, if not of the fact of memory itself, at least of many of the phenomena of remembering and forgetting in everyday life.

PARIS.

Academy of Sciences, June 21.—**M. Henri Deslandres** in the chair.—The President announced the death of **Adolphe Carnot**, free member.—**L. Torres Quevedo** was elected correspondant for the section of mechanics in succession to the late **M. Boulvin**.—**P. Humbert**: Functions of the hyperparaboloid of revolution and hyperspherical functions.—**J. Villey**: The choice of the density of filling in the conception of aviation explosion motors.—**R. Jarry-Desloges**: Different phenomena observed on the planet Mars in the present opposition. **Nix Olimpica** was discovered by **Schiaparelli** in 1879, but no measurements have been taken since that date. Searches without result were made in 1881 by **Schiaparelli**, and in other observations between 1907 and 1916. The concordance between the measurements made at Milan in 1879 and those taken at Sétif in 1920 leave no room for doubt that **Nix Olimpica** has reappeared.—**Mme. Paule Collet**: Two modes of rectification of currents by galena.—**E. Berger**: Some reactions started by a primer. The use of a primer to start a chemical reaction instead of an external application of heat was first used by **Goldschmidt**, a mixture of barium peroxide and magnesium powder being employed to start the reaction between ferric oxide and powdered aluminium. The new primer proposed by the author consists of 60 per cent. potassium nitrate (or sodium nitrate) and 40 per cent. commercial calcium silicide. This burns with a very high temperature, and can be lit with a match. A description is given of the applications of this method to the production of phosphorus and arsenic, the reduction of the sulphates of the alkaline earths by phosphorus, and the preparation of the fluorides of silicon and boron.—**A. Recoura**: The constitution of the grey lilac chromium sulphate.—**P. Jolibois** and **P. Bouvier**: The precipitation of mercuric salts by sulphuretted hydrogen. The authors have applied the apparatus described in an earlier communication to the study of the reaction between mercuric chloride and hydrogen sulphide, the reaction being carried out with the two reagents in varying proportions. With excess of sulphuretted hydrogen the precipitate has the composition HgS ; with the mercuric chloride in excess the precipitate (white) has the composition $2\text{HgS}, \text{HgCl}_2$, and there was no indication of the existence of any other intermediate compound.—**P. Chevenard**: The thermal change of the elastic properties of nickel-steels. The results of experiments on twenty-eight alloys of iron and nickel are given graphically in two diagrams.—**A. de G. Rocasolano**: The catalytic decomposition of solutions of hydrogen peroxide by colloidal platinum. **Bredig** and his pupils concluded from their experimental studies of this reaction that it was monomolecular. The author has used electrosols of platinum as catalyst, and comes to the conclusion that the reaction in this case is not monomolecular or of the first order. During the reaction the catalyst is changed. If some of this altered catalyst is added to a fresh quantity of hydrogen peroxide, the ensuing reaction is now monomolecular.—**E. Hildt**: The hydrolysis of the polysaccharides. Details of further experiments on the use of a mixture of sulphuric acid and sodium benzenesulphonate as a catalyst for the hydrolysis of the sugars. Glucose and galactose retain their rotatory and reducing powers unchanged under the action of this catalyst; non-lævulosic sugars, such as lactose and maltose, are

not hydrolysed at the ordinary temperature; whilst with saccharose and raffinose the lævulose is completely split off after sufficient time at the ordinary temperature or after one hour at 98° C.—L. **Cayeux**: The secondary quartz and the rhombohedral quartz in the iron minerals of the Longwy-Briey basin.—R. **Abrard**: The existence of the Aalenian stage in the massif of Zerhoun and at Djebel Tselfat (Western Morocco).—P. **Russo**: The alluvial terraces of Oumer Rbia (Western Morocco).—L. **Daniel**: Antagonistic reactions and the rôle of the pad in grafted plants.—A. **Guilliermond**: The structure of the plant-cell. Reply to a recent communication of M. Dangeard.—M. **Dangeard**: Reply to the preceding note.—E. **Licent**: The use of mixtures of formal and chromium compounds as fixing agents. Three formulæ are given for fixing reagents containing formal, chromic acid, and acetic acid in different proportions. Although the use in the same liquid of a powerful oxidising agent and a reducing substance would appear to be irrational, long experience has shown that such mixtures give excellent results.—E. **Roubaud**: The use of trioxymethylene in powder for the destruction of the larvæ of mosquitoes. Trioxymethylene exerts a specific toxic action on these larvæ, and has advantages over petroleum and other reagents in use. Detailed instructions for the best application of the trioxymethylene are given.—J. **Nageotte**: The toxicity of certain dead heterogeneous grafts.—A. **Goris**: The chemical composition of the tubercle bacillus. A new substance has been obtained from tubercle bacilli by extraction with chloroform and subsequent purification by precipitation from chloroform solution with ether, the fats remaining in solution in the ether and the new substance, named hyalinol, being precipitated. Seven grams were obtained from 1500 grams of the bacilli. An analysis and some reactions of the hyalinol are given.—R. **Ducloux**: The formation of asporogenic races of *Bacillus anthracis*. The attenuation of its virulence.—MM. A. **Trillat** and **Mallein**: Experiments on the transmission of an infectious disease in animals by the intermediary of air. Influence of the temperature.—MM. A. **Mayer**, **Guleysse**, **Plantefol**, and **Fauré-Fremiet**: Pulmonary lesions determined by blistering compounds. Studies on the pulmonary lesions caused by the inhalation of vaporised or pulverised dichloroethyl sulphide on the dog, rabbit, and guinea-pig.

Books Received.

Techno-Chemical Receipt Book. Compiled and edited by W. T. Brant and Dr. W. H. Wahl. Pp. xxxiii+516. (London: Hodder and Stoughton, Ltd.) 15s. net.

Psychoneuroses of War and Peace. By Dr. M. Culpin. Pp. vii+127. (Cambridge: At the University Press.) 10s. net.

Reports of the Department of Conservation and Development, State of New Jersey. Annual Report for the Year ending June 30, 1919. Pp. 115. (Trenton, N.J.)

The Science Reports of the Tôhoku Imperial University. 1st Series. (Mathematics, Physics, Chemistry.) Vol. ix., No. 2, April. (Tokyo: Maruzen Co., Ltd.)

Meddelanden från Lunds Astronomiska Observatorium. Serie ii., Nr. 22: A Study of the Stars of Spectral Type A. By H. G. Malmquist. Pp. 69. (Lund.)

The Journal of the Royal Agricultural Society of England. Vol. lxxx. Practice with Science. Pp. viii+438+cli. (London: J. Murray.) 10s.

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Diary of Societies.

THURSDAY, JULY 8.

ROYAL SOCIETY OF MEDICINE (Obstetrics and Gynæcology Section), at 8.—G. Ley: The Pathology of Accidental Hæmorrhage.

FRIDAY, JULY 9

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (at the West London Hospital), at 5.—Annual General Meeting.

SATURDAY, JULY 10.

PHYSIOLOGICAL SOCIETY (at Physiological Laboratory, University, Oxford), at 4.—J. B. Leathes and H. C. Broadhurst: Excretion of Phosphate.—J. Barcroft and F. J. Roughton: Diffusion Co-efficient of Lung.—S. P. L. Sørensen and E. J. Cohn: Solubility of Globulin.—A. Krogh: Reaction of Blood Vessels to Local Stimuli.

TUESDAY, JULY 13.

SOCIETY FOR THE STUDY OF INEBRIETY (at the Medical Society of London), at 4.—A. Evans and Others: Discussion on Alcohol and Alcoholism in relation to Venereal Disease.

WEDNESDAY, JULY 14.

INSTITUTION OF PETROLEUM TECHNOLOGISTS (in Canada Building, Crystal Palace), at 6.—H. Barringer: Oil Storage, Transport, and Distribution (Free Public Lecture).

THURSDAY, JULY 15.

ROYAL SOCIETY OF MEDICINE (Dermatology Section), at 5. RÖNTGEN SOCIETY (at University College), at 9.—Dr. W. D. Coolidge: Address (Special Open Meeting).

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