

Mathematics. Candidates will be tested in Classics, and required to show sufficient knowledge to pass Responsions. The emolument is 80*l.* annually. The examination begins on November 23. Candidates must not have exceeded the age of nineteen. The election in the first place is for two years. The tenure will be renewed for another two years if the College is satisfied with the progress and good conduct of the scholar. For special reasons the scholarship may be prolonged for a fifth year.

The formation of the new Boards of Faculties will not be proceeded with this term; it is proposed to defer the elections till a day not later than February 3, 1882. The appointment of examiners will therefore rest this term with the Vice-Chancellor and Proctors as before.

Prof. Max Müller has been elected a permanent Delegate of the Clarendon Press.

CAMBRIDGE.—Mr. James Ward is appointed Lecturer on the Science of Education at Cambridge for the present year; Mr. W. N. Shaw, of Emmanuel College, is approved as a teacher of Physics, and Mr. J. N. Langley, of Trinity College, as a teacher of Physiology for the purpose of Medical Studies.

SCIENTIFIC SERIALS

Journal of the Franklin Institute, October.—Mohr's geographical theory of earth-pressure, by G. F. Swain.—The platinum-water pyrometer, by J. C. Hoadley.—Experiments on the fatigue of small spruce beams, by F. E. Kidder.—Theory of the stereoscope, by W. Leconte Stevens.—Report on European sewerage systems, &c. (continued), by R. Hering.—The manufacture of potash alum from felspar, by H. Pemberton, jun.—Report of the committee on the Fowler cloth-cutting machine.

Revue internationale des Sciences for September, 1882, contains: On the psychology and writings of Broca, by M. Zabrowski.—On the structure and on the movements of the protoplasm in the vegetable cell, by H. Frommann.—On orientation and its organs in man and animals, by M. Viguier.

SOCIETIES AND ACADEMIES

SYDNEY

Linnean Society of New South Wales, August 30.—The president, Dr. James C. Cox, F.L.S., &c., in the chair.—The following papers were read:—By the Rev. J. E. Tenison-Woods, F.G.S., &c., Botanical notes on Queensland, No. 4. This paper contained the author's observations on some of the Queensland species of *Myrtaceae*, chiefly of the *Eucalypti*.—By the Rev. J. E. Tenison-Woods, F.L.S., &c., &c., on a coal plant from Queensland. This is an account of a fossil species of *Equisetum* found in the Ipswich coal beds, and provisionally named *E. rotiferum*, from the wheel-like shape of the diaphragm. No *Equisetum* had previously been found in the Australian coal beds.—By William Macleay, F.L.S., &c., Observations on an insect injurious to the vine.

PARIS

Academy of Sciences, October 16.—M. Jamin in the chair.—The following papers were read:—On the shock of two balls placed on a billiard table, by M. Resal.—On the catalogue of six hundred tornadoes observed in the United States in the course of this century, by M. Faye. This relates to a report by Sergeant Finley, of the U.S. meteorological service. The rapid increase of tornadoes recorded shows the rapidity with which population has increased. Trombes and tornadoes are short epiphenomena of cyclones. *Inter alia*, the mean velocity of gyration in a tornado is about 174 metres per second; the usual diameter is about 300 m. to 400 m.; the mean velocity of translation 17 m. per second. Most go from S.W. to N.E. They traverse about 11 leagues on an average, and last three-quarters of an hour. Several tornadoes may occur in one cyclone. They are formed exclusively in the dangerous semicircle of a cyclone, and nearly always a little in advance. They show a marked predominance in April, June, and July, and from 4 p.m. to 6 p.m.—On the functions of seven letters, by M. Brioschi.—Rational conception of the nature and propagation of electricity deduced (1) from consideration of the potential energy of ethereal matter associated with ponderable matter; (2) from the mode of production and transmission of work arising from variations of this energy, by M. Leduc.—On the processes employed for the construction and plan of the metric standards, by M. Tresca. He

has been unwell, but promises a complete memoir on the subject shortly.—Brazilian missions for observation of the transit of Venus, by M. Cruls. These are four in number, and will act at St. Thomas, Magellan, Pernambuco, and Rio de Janeiro, the respective heads being Capt. Joffé, M. Cruls, M. Lacaille, and Capt. Jacques. Each station will have a 6-in. equatorial, a 4½-in. astronomical telescope, a meridian instrument with collimator, an excellent compensated pendulum, electric chronograph, &c. A chronometric junction of Magellan with Montevideo will be undertaken.—On the comet 1812 (Pons) and its approaching return, by MM. Schulhof and Bossert.—On the metric and kinematic properties of a sort of conjugated triangles, by M. Stephanos.—Ordinary and extraordinary indices of refraction of Iceland spar for rays of different wave length as far as the extreme ultra-violet, by M. Sarasin. The measurements referred to the principal lines of the visible solar spectrum and the lines of cadmium (induction spark) between two cadmium points). M. Soret's fluorescent ocular was used for the ultra-violet lines. The columns for the two prisms used show satisfactory agreement, as do also the author's values for the ordinary index for D and F with those of M. Mascart and M. Cornu.—The forces of induction which the sun develops in bodies by its rotation vary, all other things equal, in inverse ratio of the squares of the distances, by M. Quet.—On M. Helmholtz's theory of double electric layers; calculation of the magnitude of a molecular interval, by M. Lippmann. The interval ϵ he calculates to be 1-35,000,000 mm., which it is interesting to compare with the number, nearly the same (1-30,000,000) arrived at by Sir William Thomson by quite another way, for the minimum distance separating copper from zinc.—On the electrolysis of hydrochloric acid, by M. Tommasi. He examines the two cases of concentrated and dilute acid, platinum electrodes being used.—On the reduction of nitrates in arable land, by MM. Dehérain and Maquenne. Nitrates, in being reduced in arable land, liberate under certain conditions protoxide of nitrogen. The reduction occurs only in arable land containing much organic matter, and has been observed only when the atmosphere of the ground was absolutely free from oxygen.—On the industrial richness of crude alunit, in powder, by M. Guyot. The proportion of the base varies considerably (17.5 to 32 per cent.).—On chronic poisoning by antimony, by MM. de Poncy and Livon. A cat weighing 867 gr. at first was made to absorb, in a regular progressive way, 0.628 gr. of white oxide of antimony between April 26 and August 13. The animal did not pass through a period of embonpoint (as with arsenic), but it gradually fell into disease, took diarrhoea and died. All the tissues were pale and colourless, and nearly all the organs showed fatty degeneration.—Two maps of part of the Newfoundland coast, by Admiral Cloué, were presented.

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