AN open competitive examination for not fewer than twelve situations as assistant examiner in the Patent Office will be held by the Civil Service Commissioners in April next. The examination will commence on April 23, and forms of application for admission to it are now ready for issue, and may be obtained on request addressed by letter to the secretary, Civil Service Commission, Burlington Gardens, London, W.

AT the annual conference of the Labour Representation Committee held on February 16 considerable discussion took place on the following resolution:—"That this conference condemns the educational policy of the Government as laid down in the Act of 1902, and demands the formulation of an educational programme based upon the principle of equal opportunities for all, such programme to aim at securing—(1) that immediate provision be made for giving at least one free meal per day to all school children; (2) that all grades of education shall be free and State maintained; (3) that all education shall be free, and that secondary and technological education be placed within the reach of every child by the granting of bursaries or maintenance scholarships to all children whose usefulness would be enhanced by such extended education; further, that adequate provision be made for children to continue at school until the age of sixteen years, or until such age as the university course begins; (4) that provision be made to continue the education of capable students through the university courses; (5) that the standard of capacity shall be judged by work previously accomplished, and not by competitive examination; (6) that the education in all State-supported schools shall be secular; (7) that all State-supported schools shall be under the control of and their affairs administered by the directly elected representatives of the people; (8) that each educational district shall be required to train the number of pupil teachers demanded by local needs, and for this purpose to establish training colleges, preferably in connection with universities or university colleges; (9) that the cost of the above-mentioned reforms shall be borne by the National Exchequer out of revenue obtained through broadening the basis of taxation, and by the restoration and democratic administration of valuable misappropriated educational charities and endowments." "This conference, therefore, instructs the committee (or such body as may be appointed for the purpose) to draft a Bill embodying the principle of the said resolution, with a view to the Labour group introducing it early into Parliament." A division having been taken, the result was declared as follows:—817,000 votes for the resolution and 76,000 for its rejection. The resolution was therefore carried. In view of the growing importance of the labour interest, it is satisfactory and gratifying to find a large and representative body of labour delegates appreciating the fact that the future welfare of the country is closely bound up with the provision of a rational system of national education.

THE publication on February 19 of a correspondence between Mr. A. H. D. Acland, formerly Minister of Education, and Mr. Birrell, President of the Board of Education, is gratifying evidence that at last something is to be done in the direction of providing adequate Exchequer grants for English secondary education. Mr. Birrell, in reply to a series of suggestions made by Mr. Acland, announces that provision is to be made in the Estimates for this year for a considerable increase of the Exchequer grants (1) in aid of secondary schools; (2) to alleviate the burden now placed upon local authorities in respect of the education of teachers; and (3) to assist further the building of training colleges for teachers by the local authorities. How much higher education in this country has suffered from the inadequate education of boys in our secondary schools, which, through want of funds, are too often under- and inefficiently staffed and equipped, has been pointed out in these columns with patient persistence. It is earnestly to be hoped that the findings of the Royal Commission on Secondary Education of ten years ago will now be considered seriously, and a statesmanlike attempt made to secure for the pupils in whose hands our future success as a manufacturing nation lies, a rational and complete secondary education which will enable them to take proper advantage of higher technical instruction. The promise that local education authorities are to be helped—in a degree commensurate with modern needs—in the pressing work of supplying more training college accommodation is heartily to be welcomed. The proportion of fully trained teachers in our elementary schools is at present scandalously low; and this is due primarily to the fact that until quite recently the only training colleges were those built—with the aid of special State grants like that of 1835—by the National and the British and Foreign School Societies, and supported largely by Government grants on each teacher in training. Though in recent years the work of day training departments in connection with university colleges has improved the facilities for the training of teachers, much yet remains to be accomplished if English elementary education is to take advantage of modern educational enlightenment. Local education authorities, with their knowledge of local needs, will be in a position, when helped by the promised Treasury grants, to start the much needed provision of more colleges where teachers may become acquainted with the principles upon which successful teaching must be based. In carrying out this important work, the need of training for secondary school teachers must not be forgotten. Most masters in secondary schools begin their work knowing only what to teach, and nothing of how to teach.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 25.—"On the Effect of High Temperatures on Radium Emanation." By W. **Makower.** Communicated by Prof. Arthur Schuster, F.R.S.

(1) The activity of radium emanation in radio-active equilibrium with its products A, B, and C, is changed by heating above 1000° C.

(2) The effect increases with the temperature up to 1200° C., and possibly beyond this temperature.

(3) The effect increases with the time of heating for about the first hour, but subsequent heating is without effect.

PARIS.

Academy of Sciences, February 12.—M. H. Poincaré in the chair.—Some properties of the α rays emitted by radium and by bodies rendered active by radium: Henri **Becquerel.** Some experiments of Prof. Rutherford recently published have led the author to repeat some of his earlier work on the deviation of the radium rays. In the present paper full details are given of the strength of the magnetic field, and the dimensions and arrangement of the apparatus. As a result, M. Becquerel definitely rejects the interpretation deduced by him from his earlier experiments and the hypothesis of an increase in the radius of curvature along the trajectory, and accepts the explanation of Prof. Rutherford, all the measurements confirming the existence of a reduced velocity for the α rays when traversing a leaf of aluminium. There is no difference in the behaviour of α rays arising from radium salts or from bodies rendered active by the emanation.—The internal pressure of fluids and the equation of Clausius: E. H. **Amagat.**—Some lemmas relating to quasi-waves of shock: P. **Duhem.**—Observation of the eclipse of the moon of February 9, 1906, made at the Observatory of Paris: P. **Salet.** Note on the time of contact, with especial reference to the difference observed between the photographic and visual observations in different eclipses.—Observations of the Brooks comet (1906*a*) made at the Observatory of Algiers with the 31·8 cm. equatorial: MM. **Rambaud** and **Sy.** Observations on the apparent positions of the comet and the positions of the comparison stars were made on January 31 and February 2. On January 31 the comet had the appearance of a round nebulosity with an eccentric nucleus, with a lustre comparable with that of a star of the eleventh magnitude.—Observations of the sun made at the Observatory of Lyons with the 16 cm. Brunner equatorial during the third quarter of 1905: J. **Guillaume.** Fifty-six days were available for observations during the quarter, the results of which are summarised in three tables showing the number of spots, their distribution in latitude, and the distribution of the faculæ in latitude.—Integral functions: Ed. **Maillet.**—A

hyperelliptic Hessian: Louis **Remy.**—The extinction of a solitary wave propagated along a horizontal elastic tube: A. **Boulanger.**—A comparison of the time of discharge in an X-ray tube and of a spark in series with the tube producing the rays: Bernard **Brunhes.** Remarks on a recent paper by M. André Broca, and directing attention to a paper published by the author in 1900 on the same subject.—The recombination of the ions in saline vapours: G. **Moreau.** The ions of salt vapours, both by their mobilities and by the values of the coefficient α, for temperatures between 170° C. and 0° C., are intermediate between the ions of ordinary gases and the large ions due to the oxidation of phosphorus. Their mass diminishes as the temperature rises, and in a flame, for the negative ion, they become comparable with kathodic particles, and, for the positive ion, with the atom of hydrogen.—Remarks on the combinations of the rare metals of the cerium group and on their sulphates: Camille **Matignon.** A reply to a claim for priority made by M. Otto Brill.—Calcium iodomercurates: A. **Duboin.** These salts are prepared by alternately adding calcium iodide and mercuric iodide to water, finishing with a slight excess of the calcium salt. The solution had a density of 2·89 at 16° C., and three crystalline compounds were isolated from the solution.—The existence of sulphides of phosphorus: H. **Giran.** Various mixtures of phosphorus and sulphur were heated in sealed tubes to 200° C., and the melting points taken after solidification. The results are given graphically. The four maximum points correspond exactly to the proportions of sulphur indicated by the sulphides P_4S_3, P_2S_3, P_2S_5, and PS_6.—The preparation and properties of strontium: MM. **Guntz** and **Rœderer.** Strontium amalgam is heated in a current of hydrogen until the whole of the mercury is expelled, strontium hydride remaining. This hydride, heated in a vacuum at 1000° C., is dissociated, the vapours of strontium being condensed on a cool tube. The metal thus produced contained 99·43 per cent. of strontium, and was utilised in redetermining some thermochemical data.—The action of some esters of some dibasic acids on the halogen-magnesium derivatives of the primary aromatic amines: F. **Bodroux.**—The constitution of the sulphates of chromium: Albert **Colson.**—The existence of bicarbonates in mineral waters, and on the supposed anomalies of their osmotic pressure: L. C. **Maillard** and Lucien **Graux.** For one specimen of mineral water it is shown that the cryoscopic results are not opposed to the idea of the existence of bicarbonates in mineral water.—A new mode of extraction of oil of anise: Ph. **Eberhardt.** The oil can be extracted from the leaves as well as the fruit.—The anti-coagulating power of the blood serum of the lower animals: J. **Sellier.** Serum extracted from some fishes and invertebrates has the power of preventing the coagulation of milk by rennet.—The annelids of the Red Sea: Ch. **Gravier.**—The salivary glands of the snail (*Helix pomata*): M. **Pacaut** and P. **Vigier.**—The mechanism of the pathological modality special to each organ in the course of a general disease: A. **Charrin.**

DIARY OF SOCIETIES.

THURSDAY, FEBRUARY 22.

ROYAL SOCIETY, at 4.30.—On the Coefficient of Viscous Traction and its Relation to that of Viscosity: Prof. F. T. Trouton, F.R.S.—Contributions to our Knowledge of the Poison Plants of Western Australia. Part I. Cygnine: E. A Mann and Dr. W. H. Ince.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Crane Motors and Controllers: C. W. Hill.

FRIDAY, FEBRUARY 23.

ROYAL INSTITUTION, at 9.—The Internal Architecture of Metals: Prof. John O. Arnold.

PHYSICAL SOCIETY, at 5.—A Note on Talbot's Bands: J. Walker.—Secondary Röntgen Radiation: C. G. Barkla.—Records of the Difference of Potential between Railway Lines, and a Suggested Method for the Observation of Earth-Currents and Magnetic Variations: C. W. S. Crawley and F. B. O. Hawes.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Graphical Determination of the Deflection of Beams: C. H. Sumner.

SATURDAY, FEBRUARY 24.

THE ESSEX FIELD CLUB (at Essex Museum of Natural History, Stratford at 6.30.—The Mosses of Essex: a Contribution to the Flora of the County: F. J. Chittenden.—Mysterious Subsidence at Mucking, Essex. Miscellaneous Denehole Notes, 1906: T. V. Holmes.

MONDAY, FEBRUARY 26.

SOCIETY OF ARTS, at 8.—Modern Warships: Sir William White, K.C.B. F.R.S.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Travels on the Boundaries of Bolivia and Peru: Baron Erland Nordenskjöld.

INSTITUTE OF ACTUARIES, at 5.—On a Form of Spurious Selection which may arise when Mortality Tables are Amalgamated: W. Palin Elderton.

TUESDAY, FEBRUARY 27.

ROYAL INSTITUTION, at 5.—Food and Nutrition: Prof. W. Stirling.

ANTHROPOLOGICAL INSTITUTE, at 8.15.—Anthropological Notes from Lake Tanganyika: W. A. Cunnington.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Adjourned Discussion*: A Plea for Better Country Roads: G. R. Jebb.—Country Roads for Modern Traffic: J. E. Blackwall.

WEDNESDAY, FEBRUARY 28.

SOCIETY OF ARTS, at 8.—London Traffic: Captain G. S. C. Swinton

THURSDAY, MARCH 1.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: Experimental Inquiry into the Factors which Determine the Growth and Activity of the Mammary Glands: Miss J. E. Lane-Claypon and Prof. E. H. Starling, F.R.S.—The Specificity of the Opsonic Substances in the Blood Serum: Dr. W. Bulloch and G. T. Western.—The Internal Anatomy of Stomoxys: Lieut. F. Tulloch.

CHEMICAL SOCIETY, at 8.30.—Studies of Dynamic Isomerism. Part IV. Stereoisomeric Halogen Derivatives of Camphor: T. M. Lowry.

ROYAL INSTITUTION, at 5.—The Physiology of Plants: F. Darwin, F.R.S.

LINNEAN SOCIETY, at 8.—On a New Type of Stem from the Coal-measures: Dr. D. H. Scott, F.R.S.—Notes on Some Species of Nereis in the District of the Thames Estuary: Dr. H. C. Sorby, F.R.S.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY, at 8.—Coast Lines Protected by Chain Cable Groynes: R. G. Allanson-Winn.

FRIDAY, MARCH 2.

ROYAL INSTITUTION, at 9.—Hippocrates and the Newly Discovered Health Temple at Cos: Dr. R. Caton.

SATURDAY, MARCH 3.

ROYAL INSTITUTION, at 3.—The Corpuscular Theory of Matter: Prof. J. J. Thomson, F.R.S.

CONTENTS.