of the benches have been kept as clear as possible, carrying only Bunsen burners and two movable trays, each of which can hold ten reagent bottles. These trays, with the bottles they contain, fit into cavities in the sides of the benches, so that the tops can be cleared in a moment when required for practical geographical work. The reagent bottles are double-labelled, so that they can be used by two pupils working opposite each other. Attached to the front of the demonstrator's bench is a shelf, which hangs vertically when not in use. This has been designed for the purpose of holding the apparatus required for the lesson, and two girls from each bench come to this dispensing shelf and take from it all they require for their experimental work. The laboratories are both supplied with many light trays of varying sizes, each capable of holding a dozen beakers, flasks, burettes or pipettes, &c. These trays fit into the bench cupboards. Neither cupboards nor drawers have been set apart, as is usual, for the individual use of the pupils except in the case of the more advanced students, as experience has shown that they are apt to become receptacles for burnt matches, corks, soiled filter papers, &c. Placed in each stool recess is a shelf which holds a trough, test-tube rack, tripod, and retort-stand. The same principle has been observed in the fittings of the physical and botanical laboratory. The fume cupboards, of which there are four—two in the chemical laboratory, one in the physical laboratory, and one between the lecture theatre and the preparation room—are all supplied with both gas and water. The building is fitted throughout with electric light. In the lecture theatre there is an electric lantern, and a part of the cream-coloured wall acts as the screen, and allows a picture 10 feet square. This room is fitted with dark blinds, and ventilated, when these are in use, by means of an electric fan. In the conservatory are benches at which the pupils work when fitting up apparatus for botanical experiments. The usual precautions have been taken against accident by fire, and Minimax fire extinguishers stand in prominent positions.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 13.—D. P. **Phillips**: Re-combination of ions at different temperatures. The ionisation was produced in a layer of air of uniform thickness by means of a single discharge through a Röntgen bulb. The layer of air ionised was situated midway between two parallel electrodes, and was separated from each by a layer of un-ionised air. The quantity received by each electrode depends upon the field established between them, and from the variation of the quantity with the field the coefficient of re-combination can be calculated. By placing the pair of electrodes in a double-walled jacket the temperature was varied, and the coefficient of re-combination found at different temperatures. The values which were found are:—

Temp. Centigrade ...	16°	100°	155°	176°	273°
Coeff. of Re-combination	1·00	0·50	0·399	0·36	0·178

The value at the temperature of the room, *i.e.* at 16°, was taken as unity, and the other values were compared with this. The object of having the layer of ionised air separated from the electrodes by un-ionised air was to decrease the number of ions reaching the electrodes by diffusion, and so causing an apparent increase in the re-combination. With this arrangement the effect of diffusion would be to decrease the apparent re-combination. In order to test the magnitude of the error introduced by diffusion, the thickness of the ionised layer of air was altered, and the coefficient of re-combination determined for each thickness. At each temperature it was found that the coefficient of re-combination apparently falls off when the thickness of the layer is reduced below a certain value. Thus it was shown that in this experiment the diffusion was negligible up to 176° C., but that at 273° C. it probably caused a serious reduction in the apparent value of the re-combination.

Sir Edward **Thorpe** and A. G. **Francis**: The atomic weight of strontium. The principle of the methods employed consisted in determining the ratios of the weights of strontium bromide and chloride and of pure silver and of the silver halides respectively. The strontium salts, $SrBr_2$ and $SrCl_2$, purified by fractional crystallisation and precipitation, were fused in a stream of dry halogen acid and allowed to solidify in dry nitrogen. While the halides were still warm the nitrogen was replaced by dry air and the salts transferred to the weighing flasks. The fused salts were ice-like in appearance, and yielded perfectly clear neutral solutions in water. The silver needed to precipitate completely the halogen was dissolved in a specially devised burette, so contrived that the solution could be delivered without loss to the strontium solution. After eighteen hours the slight excess silver left in solution was titrated with a solution of strontium halide of known strength. Finally, the silver halide was dried, fused, and weighed. The apparatus was so devised that these operations could be done without removing the silver salts from the vessel in which it was formed. As an independent check, the ratios of $SrBr_2$ and $SrCl_2$ to $SrSO_4$ were also determined by converting the strontium halides into strontium sulphate by direct treatment with sulphuric acid. The possible sources of error are discussed, and all known corrections were applied. In all, six series of observations were made. The mean results are as follows:—

Series A.	$2Ag : SrBr_2$ (6 exp's.)	87·645 ± 0·0037
,, B.	$2AgBr : SrBr_2$ (5 expts.)... ...	87·653 ± 0·0045
,, C.	$2Ag : SrCl_2$ (6 expts.)	87·642 ± 0·0017
,, D.	$2AgCl : SrCl_2$ (5 expts.)... ...	87·645 ± 0·0020
,, E.	$SrBr_2 : SrSO_4$ (3 expts.)... ...	87·629 ± 0·021
,, F.	$SrCl_2 : SrSO_4$ (4 expts.)... ...	87·661 ± 0·0078
Mean of A, B, C, D	... .	87·646 ± 0·0016
,, E, F	... ...	87·645 ± 0·0107
,, A, B, C, D, E, F	... ...	87·646 ± 0·0029

The authors adopt 87·65 as the definite value for the atomic weight of strontium—a number only 0·03 in excess of Richards's final value as given in the last report of the International Committee on Atomic Weights.

February 17.—Sir Archibald Geikie, K.C.B., president, in the chair.—E. **Marsden**: Phosphorescence produced by α- and β-rays.—Prof. E. **Rutherford**: Theory of the luminosity produced in certain substances by α-rays.—Dr. H. **Geiger**: The scattering of the α-particles by matter. In a previous note on the same subject experiments have been described which gave direct evidence of the scattering of the α-particles in passing through matter. These experiments have been continued with the object of determining quantitatively the amount of scattering under various conditions. In particular the influence of the thickness and nature of the scattering material and of the velocity of the α-particles has been studied in detail. With the exception of a few modifications, the experimental arrangement was the same as that employed in the preliminary experiments. A strong source of homogeneous α-radiation was placed at one end of a long tube, and the α-particles, after passing through a narrow circular opening, fell upon a zinc sulphide screen sealed to the other end of the tube. When the pressure inside the tube was very low the scintillations produced by the impact of the α-particles on the screen were confined to a very small area. When, however, the α-particles were intercepted by a thin sheet of metal, the scintillations were spread out over a much greater area, this being due to the scattering of the α-particles when passing through the metal sheet. The distribution of the scintillations over the screen was determined by counting them at different parts of the screen. From the distribution curve the most probable angle through which the α-particles were turned in passing through the metal sheet under investigation could be found. In all experiments the scattering was measured by this angle, and the following results were obtained:—(1) The most probable angle of scattering increases for small thicknesses approximately proportional to the square root of the thickness of matter traversed by the α-particle. For greater thicknesses the scattering angle increases more rapidly. (2) The most probable angle of scattering is proportional to the atomic weight of the scattering material. (3) The most probable angle of scattering increases rapidly with decreasing velocity of the α-particles.—Dr. H. **Geiger**: The ionisation produced by an α-particle. Part ii., Relation between ionisation and absorption. Experiments are described which were undertaken to measure the velocity of the α-particles after passing through various sheets of mica of known stopping power. A thin wire, which was made highly active by the deposit from radium emanation, served as source of radiation. The α-particles emitted from it passed through a narrow slit and produced a small line of scintillations on a zinc sulphide screen. The deflection of the line in the magnetic field amounted to 1 cm. and more, and could be accurately measured by means of a travelling microscope. The relative velocities found in this way when different sheets of mica were interposed were up to 6 cms. of the range in good agreement with those previously obtained by Prof. Rutherford by a photographic method. Great difficulties were experienced in observing the scintillations when the α-particles had to pass through a thickness of mica nearly equivalent to the range. It could, however, be shown that the velocity decreased rapidly towards the end of the range. The lowest velocity which was measured corresponded to 0·27 of the initial velocity. The α-particles had in this case to pass through a thickness of mica equivalent to 6·8 cm. of air. The experimental results could be represented with good approximation by the equation $v^3 = a\ (R-x)$, where a and R are constants, R denoting the maximum range of the α-particles. The curve indicates that the velocity becomes zero at the end of the range. In the course of the experiments an investigation was carried out to see whether all the α-particles from radium C are emitted with identical velocities. The experiment showed that the variation in the initial speed, if any, was certainly less than 0·5 per cent., but that the α-particles acquired a slight difference in velocity in passing through air. Assuming that the ionisation produced by an α-particle is proportional to the expenditure of energy, the equation representing the ionisation at any point of the path can be deduced from the above equation for the velocity. Taking into account the slight variation of velocity in a pencil of α-particles at the end of the path, the theoretical ionisation curve agrees fairly well with the experimental.—H. C. **Greenwood**: The influence of pressure on the boiling points of metals. The present research is a continuation of a previous paper dealing with the boiling points of metals under atmospheric pressure. Previous work at reduced pressures has been strictly limited by the lack of any material capable of maintaining a vacuum at high temperature, being, in fact, confined, except for a few metals of relatively low boiling point like zinc, to some observations in a very high vacuum. For similar reasons nothing has been done on the effect of high positive pressures. The difficulties here indicated were avoided by arranging the whole furnace inside an enclosure in which the desired changes of pressure could be produced. Heating was effected electrically, and the temperatures were measured optically, while the actual boiling point determinations were made by a method of visual observation similar to that before used. Observations were taken at pressures ranging from 100 mm. of mercury to 50 atmospheres. The order of magnitude of the effects produced is shown by the following example:—The boiling point of bismuth under 102 mm. of mercury is 1200° C., and under 16·5 atmospheres 2060° C., a variation of 860° being thus produced. The boiling points of all the metals studied (bismuth, copper, lead, silver, tin, zinc) were found to show a closely similar dependence on the pressure.—A. O. **Rankine**: The viscosities of the gases of the argon group. The viscosities of the five gases—helium, neon, argon, krypton, and xenon—have been compared with that of air. The method used was that described in a paper recently communicated to the society. The principal advantage of this method is that it enables the viscosity of quite a small quantity of gas to be determined with considerable accuracy. The total volume of the apparatus used in this case was rather less than 6 c.c. The values found for the viscosities of helium and argon are in close agreement with those obtained by previous observers. The results for the remaining three gases admit of no comparisons, these being the first determinations. All five gases are more viscous than air, the ratios η/η air being as follows:—

He	Ne	A	Kr	X
1·086	1·721	1·220	1·361	1·234

The viscosity of neon at ordinary temperature is far higher than that of any other gas hitherto experimented upon, and krypton is next in order of magnitude. As the atomic weight increases the viscosity alternately rises and falls. If, however, the mean free paths are calculated by using Maxwell's equation, they are found to decrease regularly with increase in atomic weight. The paper also contains estimates of the relative sizes of the atoms and their densities, the calculations being based upon the kinetic theory of gases. The conclusions arrived at are that the densities of the atoms of neon, krypton, and xenon are the same, and three times as great as that of helium. The argon atom is nearly twice as dense as the helium atom.

Physical Society, February 11.—Dr. C. Chree, F.R.S., president, in the chair.—Prof. H. L. **Callendar**: *Presidential address.* The application of resistance thermometers to the recording of clinical temperatures. The objections to thermocouples are twofold. The E.M.F.'s developed are so small that the recording instruments must be very sensitive and therefore unsuitable for ordinary use. Serious difficulties arise with regard to the thermostat necessary to maintain one of the junctions of the thermocouple at a constant temperature. The chief difficulty in connection with the use of resistance thermometers lies in the heating effect of the current. It was pointed out that in platinum thermometry, to obtain accurate compensation for the resistance of the leads, it is necessary that the ratio arms of the Wheatstone bridge should be equal, and it was shown that this condition reduced the sensitiveness to be obtained by suitably varying the resistances by about 30 per cent. In joining up a bridge in work with resistance thermometers, Maxwell's rule for the positions of the battery and galvanometer which give maximum sensitiveness is seldom applicable. While Maxwell's arrangement actually gives the greatest sensitiveness, the heating effect of the current is so much greater that this more than counterbalances the increased sensitiveness. The problem to be solved in designing a suitable thermometer for clinical work is, with a given galvanometer and resistance-box, to find the resistance of the thermometer which will give the most accurate results for a given heating effect of the current. This is given by the equation $R = 2G + S$, where G is the resistance of the galvanometer and S that of one of the ratio arms. It is important in the construction of a thermometer for clinical work to secure quickness of action and to reduce the heating effect of the current. An ordinary tube-form of thermometer is good for laboratory work with sensitive galvanometers, but it is unsuitable for use with recorders. The pattern of the thermometer must be suited to the purpose for which it is intended. Three types were shown, designed for mouth, rectal, and surface work. Continuous records obtained from a patient with a normal temperature were shown. The temperature is generally very steady if the thermometer does not shift or the patient get wholly or partly out of bed. The effects of external changes of temperature were also shown, and simultaneous records taken on different parts of the body illustrated the fact that the temperature does not vary in the same way at all places.

Royal Meteorological Society, February 16.—Mr. H. Mellish, president, in the chair.—E. **Mawley**: Report on the phenological observations for 1909. During the whole year wild plants came into blossom behind their usual time, the departures from the average being greatest in March and April. Such early spring immigrants as the swallow, cuckoo, and nightingale made their appearance rather earlier than usual. The only deficient farm crops were beans, peas, and hay. On the other hand, the yield of wheat, barley, oats, turnips, mangolds, and potatoes was well above the average, and more particularly barley and turnips. The crop of apples, pears, and plums was under average, whereas that of raspberries, gooseberries, currants, and strawberries, taken together, was fairly good. As regards the farm crops, this was the fourth year in succession in which the yield has been above average.—Colonel H. E. **Rawson**: The North Atlantic anticyclone. The author has examined the "Synchronous Weather Charts of the North Atlantic" published by the Meteorological Office for the months of September, 1882, to August, 1883, and has analysed the tracks of the centres of high-pressure areas during that period. He finds that it is very rare for an individual system which has traversed the American continent to cross the ocean from land to land. In every month centres of high areas which have drifted across America and have travelled out on to the ocean are found coalescing there with one another or with the centres of the persistent Atlantic anticyclone. From mid-February to mid-September the charts indicate that on arrival on our coasts systems extend westwards, and their centres reverse their easterly movement and drift to the west, while in June and July the centres of high areas form over the ocean within the Atlantic anticyclone rather than drift into it from the American continent.

Institution of Mining and Metallurgy, February 17.—Mr. Edgar Taylor, president, in the chair.—Bede **Collingridge**: Errors due to the presence of potassium iodide in testing cyanide solutions for protective alkalinity. The results of experiments made by the author show that potassium iodide exercises an important influence on cyanide solutions, especially on solutions which contain no protective alkali, since in testing these in the presence of potassium iodide they show protective alkalinity. This fact is of considerable interest in cyanide plants, because cyanide decomposes more rapidly in solutions deficient in protective alkalinity than in those protected by an alkali, and the method adopted by the author for testing without potassium iodide would therefore imply a marked saving of cyanide in the case of large plants.—A. R. **Andrew**: The detection of minute traces of gold in country rock. In the course of investigations made for the purpose of determining the presence, or otherwise, of minute traces of gold in the shales and greenstone of Merionethshire, the author found that he was unable to believe in the trustworthiness of the methods usually adopted for that purpose, particularly as regards the possibility of obtaining litharge or any sort of lead absolutely free from gold and silver. On that account he claims that no credence should be given to any alleged detection of minute traces of gold in country rock unless accompanied by a full account of the means by which the purity of the litharge is assured.—W. A. **MacLeod**: The surface condenser in mining power plant. The author conducted a number of tests on the winding engines of a mine with which he was connected, the results of which are embodied in this paper, together with a vast amount of other information concerning the relative consumptions and efficiencies of condensing and non-condensing engines. He found that the employment of condensers was distinctly beneficial in both respects, even under the intermittent conditions attaching to most mining power plants, and the results of his investigation have enabled him to determine with some exactness the leading features to be emphasised in the laying down of a condensing plant suitable for work of a more or less intermittent nature, as is the case of winding engines.

CAMBRIDGE.

Philosophical Society, January 24.—Dr. Hobson, vice-president, in the chair.—R. R. **Mines**: The relative velocities of diffusion in solution of rubidium and cæsium chlorides. The rates of diffusion of salts into a gelatine jelly were compared by measurement of the progressive changes in the electrical conductivity at a fixed distance below the surface of the jelly when in contact with decinormal solutions of the salts. The concentration of salt corresponding to each reading was obtained from Kohlrausch's tables. Experiments carried out with lithium, sodium, and potassium chlorides gave results which agree with the values found by previous observers for the relative rates of diffusion of these salts in aqueous solution. This was considered to justify the extension of the method to rubidium and cæsium chlorides, as to the rates of diffusion of which no data were available. Rubidium chloride was found to diffuse slightly faster than potassium chloride, and cæsium chloride slightly faster than rubidium chloride.—L. **Southerns**: Experimental investigation as to dependence of the weight of a body on its state of electrification.—Miss D. B. **Pearson**: Note on an attempt to detect a difference in the magnetic properties of the two kinds of ions of oxygen.

PARIS.

Academy of Sciences, February 14.—M. Émile Picard in the chair.—G. **Lippmann**: A seismograph with a liquid column. A T-tube, full of water, is connected at each end with two basins of the same liquid. The changes of level in the arm of the T-tube are indicated by a thin disc of mica, connected through a suitable mechanism to a mobile mirror. To avoid friction, the disc does not touch the sides of the tube. Owing to this, slow changes of the vertical are not recorded by the instrument. The apparatus has the advantage that its period is invariable, depending only on the dimensions originally chosen, and the preliminary adjustments are much simpler than in the ordinary form of seismograph.—The perpetual secretary read a telegram from Dr. Charcot, summarising the work achieved by the Antarctic expedition.—Ernest **Esclangon**: The transformations of the Innes comet (1910*a*). Two diagrams of this comet are given, showing its appearance on January 22 and 30. Although there is no doubt that real transformations of considerable magnitude took place in this comet between the above dates, it is shown that an important part of the modifications observed, especially as regards the shape, is to be attributed to the changes in the angle at which it was observed. Observations of position are given for January 22 and 30, the conditions being especially good, and for February 9.—J. **Comas Solá**: The figure of the comet 1910*a*. Photographs were taken daily commencing January 20, and the resulting negatives discussed.—M. **Borrelly**: Observations of the comet 1910*a*, made at the observatory of Marseilles with the comet finder of 16 cm. free aperture. Positions are given for February 4, 5, 7, 8, 10, and 11.—Émile **Borel**: The definition of the definite integral.—J. **Le Roux**: Positive quadratic forms and the principle of Dirichlet.—Farid **Boulad**: The disjunction of the variables of equations nomographically rational of superior order.—Carlo **Bourlet**: The resistance of the air.—Mme. P. **Curie** and A. **Debierne**: Polonium. Starting with several tons of uranium mineral residues a preliminary treatment with hydrochloric acid furnished about 200 grams of material with an activity about 3500 times that of uranium, this activity being due to polonium. The hydrochloric acid solution was treated with ammonia to eliminate copper, the hydrates boiled with soda to dissolve lead, and then further treated with ammonium carbonate to dissolve uranium. The final residue of insoluble carbonates, obtained after several repetitions of these processes, were dissolved in hydrochloric acid and treated with stannous chloride. The original activity was concentrated in the final precipitate, which weighed about 1 gram. This was re-dissolved in hydrochloric acid, precipitated with hydrogen sulphide, the sulphides washed with sodium sulphide, and re-dissolved and again precipitated with stannous chloride. The final product of this lengthy series of operations weighed some milligrams, and was shown by spectrum analysis to contain mercury, silver, tin, gold, palladium, rhodium, platinum, lead, zinc, barium, calcium, and aluminium. The further purification presented great difficulties, but by electrolysis the activity was concentrated into about 2 milligrams of material. Activity measurements proved this to contain about 0·1 mgr. of polonium, and this is the quantity which ought to be found according to theory in two tons of a good pitchblende. Some lines in the spectrum are given which are probably due to polonium. The production of helium was proved, amounting to 1·3 cubic millimetres after 100 days, the theory requiring 1·6. An abundant disengagement of ozone was generally found near the substance.—L. **Décombe**: The measurement of the index of refraction by means of the microscope. A modification of Brewster's method. The liquid is placed between a plane and a plano-convex lens. In monochromatic light the refractive index can be determined to about 0·001.—P. Roger **Jourdain**: The alumina arising from the oxidation of aluminium amalgam in air.—Marcel **Delépine**: The dimeric aldehyde of crotonic aldehyde and the corresponding acid. A method of obtaining this substance with fair yields has been worked out, and the corresponding acid prepared and described.—J. **Bougault**: The action of nascent hypoiodous acid on the unsaturated acids: α-cyclogeranic acid.—Frédéric **Reverdin**: The action of concentrated sulphuric acid on some aromatic nitramines.—L. **Barthe**: The action of sulphosalicylic acid on trisodium phosphate.—Aug. **Chevalier**: The forest resources of the Ivory Coast: the results of the scientific expedition to western Africa. Wood, rubber and oils.—L. **Blaringhem**: A new form obtained after mutilation, *Nigella damascena polycephala*.—J. B. **Gèze**: The agricultural development in the Bouches-du-Rhône of a spontaneous species of Typha (*T. angustata*) not previously noted in France.—L. **Léger** and Ed. **Hesse**: Cnidosporidia and the larvæ of Ephemera.—L. **Joubin**: A young Spirula.—Mme. **Phisalix**: The physiological action of the mucus of batrachians on these animals themselves and on snakes. This action is the same as that of snake poison.—L. **Jammes** and A. **Martin**: The adaptation of parasitic nematodes to the temperature of their hosts.—E. **Grynfeltt**: The tensor muscle of the choroid in teleosteans.—J. **Thoulet**: The genesis of the submarine rocks known under the names of *mattes*.—André **Brochet**: The relation between the radio-activity and richness in dry extract of the thermal waters of Plombières.—Louis **Besson**: A sort of white rainbow observed at Paris.

DIARY OF SOCIETIES.

THURSDAY, FEBRUARY 24.

ROYAL SOCIETY, at 4.30.—Colour-blindness and the Trichromatic Theory of Colour Vision: Sir William Abney, K.C.B., F.R.S.—Contributions to the Biochemistry of Growth: (*a*) The Total Nitrogen Metabolism of Rats bearing Malignant New Growths: (*b*) Distribution of Nitrogenous Substances in Tumour and Somatic Tissues: W. Cramer and H. Pringle.—The Alcoholic Ferment of Yeast Juice: Part V., The Function of Phosphates in Alcoholic Fermentation: Dr. A. Harden, F.R.S., and W. J. Young.

ROYAL INSTITUTION, at 3.—Illumination, Natural and Artificial: Prof. S. P. Thompson, F.R.S.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.

FRIDAY, FEBRUARY 25.

ROYAL INSTITUTION, at 9.—Colours of Sea and Sky: Lord Rayleigh, O.M., F.R.S.

PHYSICAL SOCIETY, at 5.—Telephone Circuits: Prof. J. Perry, F.R.S.—On the Laws regarding the Direction of Thermo-electric Currents enunciated by M. Thomas: Prof. C. H. Lees, F.R.S.—A New Method of Determining Thermal Conductivity: H. R. Nettleton.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Irrigation Works: Sir R. Hanbury Brown, K.C.M.G.

SATURDAY, FEBRUARY 26.

ROYAL INSTITUTION, at 3.—Electric Waves and the Electromagnetic Theory of Light: Sir J. J. Thomson, F.R.S.

MONDAY, FEBRUARY 28.

ROYAL SOCIETY OF ARTS, at 8.—The Petrol Motor: Prof. W. Watson, F.R.S. (Lecture IV.)

INSTITUTE OF ACTUARIES, at 5.—Some Notes on the Establishment of the Office of Public Trustee in England: W. C. Sharman.

TUESDAY, MARCH 1.

ROYAL INSTITUTION, at 3.—The E otions and their Expression: Prof. F. W. Mott, F.R.S.

ZOOLOGICAL SOCIETY, at 8.30.—On the Varieties of *Mus rattus* in Egypt, with General Notes on the Species having reference to Variation and Heredity: J. Lewis Bonhote.—Zoological Collections from Northern Rhodesia and Adjacent Territories: Lepidoptera Heterocera: Sir George F. Hampson, Bart.—The Urogenital Organs of *Chimaera monstrosa*: T. H. Burlend.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Further discussion*: The Hudson River Tunnels of the Hudson and Manhattan Railroad Company: C. M. Jacobs.

ROYAL SOCIETY OF ARTS, at 4.30.—Fruit Production in the British Empire: Dr. John McCall.

WEDNESDAY, MARCH 2.

SOCIETY OF PUBLIC ANALYSTS, at 8.—The Composition of Painters' Driers: J. H. Coste and E. R. Andrews.—Note on the Analysis of Ultramarine Blue: E. R. Andrews.—The Colorimetric Estimation of Small Quantities of Bromine in the Presence of Large Quantities of Chlorine and Small Quantities of Iodine: W. J. Dibdin and Leonard H. Cooper.—Note on the Kjeldahl Estimation of Nitrogen in Fatty Substances: J. A. Brown.

ROYAL SOCIETY OF ARTS, at 8.—The Teaching of Design: E. Cooke.

ENTOMOLOGICAL SOCIETY, at 8.—Descriptions of New Algerian Hymenoptera (Sphegidæ): the late Edward Saunders.—On the Tetriginæ (Orthoptera) in the Oxford University Museum (Third Paper): J. L. Hancock.

THURSDAY, MARCH 3.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Depression of Freezing Point in very Dilute Aqueous Solutions: T. G. Bedford.—Sturm-Liouville Series of Normal Functions in the Theory of Integral Equations: J. Mercer.—The Solubility of Xenon, Krypton, Argon, Neon, and Helium in Water: A. von Antropoff.

ROYAL INSTITUTION, at 3.—Illumination, Natural and Artificial (Experimentally Illustrated): Prof. S. P. Thompson, F.R.S.

RÖNTGEN SOCIETY, at 8.15.—Dental X-ray Technique: C. A. Clark.

LINNEAN SOCIETY, at 8.—Our British Nesting Terns: W. Bickerton.

FRIDAY, MARCH 4.

ROYAL INSTITUTION, at 9.—Magnetic Storms: Dr. C. Chree, F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Reinforced Concrete as applied to Retaining-walls, Reservoirs, and Dams: A. J. Hart.

SATURDAY, MARCH 5.

ROYAL INSTITUTION, at 3.—Electric Waves and the Electromagnetic Theory of Light: Sir J. J. Thomson, F.R.S.

CONTENTS.