"From the point of view of a council which is to be, above all things, representative of the whole teaching profession, it is obvious that there must be a university group just as much as an elementary group and a secondary group. To speak of a professional council of the teaching profession without a full inclusion of the universities would obviously be absurd."

"Now the number of universities in England and Wales is eleven, and it is obvious that it would be quite impossible for these eleven universities to combine as an electoral college to name (say) five or six individuals to represent them, collectively, on such a council as is here in question, and the only conceivable method of meeting the case is that each of the eleven should have one representative.

"If, then, this group is to be composed of eleven members, this must be equally so in regard to the other three groups, according to the principle already proposed and accepted. . . . The council would thus be composed of four groups, each having eleven members."

The four groups which are each to be represented by eleven members are the university, elementary, secondary, and technological and specialist. In defining the last-named group, Sir Robert Morant remarks:—

"From some of the difficulties that have specially arisen in respect of that part of the scheme, it would seem that its nomenclature is, in some senses, inappropriate, and that what is really in question, on this side, is the need of representation of what may be called 'specialist teachers' (as well as technological teachers), as contrasted with what are usually regarded as teachers in the field of general education, or as 'general practitioners,' as was suggested at my second conference."

"It would therefore seem essential that the Teachers' Council, to be really representative of the whole profession, must comprise a representation of university teachers just as much as of elementary teachers, of secondary teachers, and of technological and specialist teachers; a council composed of these four elements would, in fact, be *representative of the whole teaching profession*, which otherwise would not be the case."

Again to quote the secretary of the Board of Education:—

"It will probably, however, be the case, from the very fact that the council will comprise representatives of widely different points of view as belonging to widely different branches of the profession, that its deliberations will best be managed under the chairmanship of someone not identified with any one of the several branches or sections; and from this point of view it would probably be desirable that the Order in Council should provide one vacancy for a chairman, to be chosen by the council from outside their numbers, who would doubtless be a man of distinction and possessing the characteristics requisite in an effective president of a body of this kind, whose deliberations would constantly be upon matters in which divergent interests and opposing points of view would frequently occur."

"This would bring the total number of the council to forty-five—a large body, but by no means too large to represent adequately the whole of so vast and important a profession as the teaching profession, nor, on the other hand, too large for arriving at effective decisions on the points likely to come before it, seeing that many of the more technical points would first have been thrashed out in special committees, and in meetings of one or more special committees meeting together, before coming before the council to be decided finally."

Mr. Runciman appends a note to the report signifying his agreement, and requesting Sir Robert Morant to have a draft made, as soon as possible, of an Order in Council on the lines outlined above.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Harkness scholarship for 1911 has been awarded to Mr. T. C. Nicholas and Mr. J. Romanes. The Frank Smart prizes have been awarded to Mr. S. R. Price (botany) and Mr. S. T. Burfield (zoology).

Mr. C. T. R. Wilson has been reappointed demonstrator of experimental physics for a period of five years from Michaelmas, 1911.

Mr. F. T. Brooks has been appointed senior demonstrator of botany, and Mr. D. Thoday junior demonstrator of botany, both for two years ending September 30, 1913.

WE learn from *The Times* that Mr. Robert Christison, of Burwell Park, Lincolnshire, and late of Lammermoor, Queensland, has telegraphed to Sir William MacGregor, the Governor of the State of Queensland and Chancellor of the University of Brisbane, his willingness to contribute a further 1000*l.* (having already given 1000*l.*) for the foundation of a chair for tropical and sub-tropical agriculture.

IT is announced in *Science* that Mr. Morton P. Plant has offered to give an endowment of 200,000*l.* for the woman's college which is to be established at New London, Conn.; it is a condition that the name shall be changed to the Connecticut College for Women. From the same source we learn that the General Educational Board has made public a list of its latest grants for colleges and schools, amounting in all to 126,800*l.* All the gifts to colleges are conditional and are applied to endowment only. Other gifts may be applied to current expenses. The grants include:—

College	Appropriation	To be raised
	£	£
Converse, Spartansburg, S.C. ...	10,000 ...	20,000
Drury, Springfield, Mo....	15,000 ...	65,000
Franklin, Franklin, Ind.	15,000 ...	65,000
Franklin and Marshall, Lancaster, Pa.	10,000 ...	45,000
Huron, Huron, S.D.	20,000 ...	20,000
Pennsylvania, Gettysburg, Pa. ...	10,000 ...	30,000
Totals	80,000 ...	245,000

Science also states that Brown University receives a bequest of 17,000*l.* from Dr. Oliver H. Arnold, of Providence.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society June 15.—Sir Archibald Geikie, K.C.B., president, in the chair.—Prof. T. G. **Brodie**: Croonian lecture: A new conception of the glomerular activity. All the more recent work upon the kidney has proved conclusively that Ludwig's explanation of the glomerular function, viz. that the glomerulus is a filtering mechanism, is incorrect. The structural details of this highly characteristic portion of the renal apparatus strongly suggest that in some way or other the blood pressure is made use of in the work of the glomerulus. Having excluded filtration in this connection, there is yet another way in which it could be directly utilised, viz. in setting up a pressure-head by means of which the watery part of the urine could be driven through the very long and narrow tubule. In reference to this side of its activity, it is suggested that the glomerulus be termed a "propulsor." An approximate calculation of the pressure-head necessary to drive the fluid along the tubule during the height of activity proves that one about equal to that present within the glomerular capillaries is required. Evidence of the action of a high intra-tubular pressure is at once obtainable from the microscopic examination of a kidney after activity. The capsules of Bowman are greatly distended and approximately spherical in shape, the glomeruli are moderately enlarged and no longer fill the capsular spaces. The tubules are straightened out, stretched, and possess a conspicuous lumen. All these changes are exaggerated by any procedure which favours the action of this intra-tubular pressure, such as a high arterial blood pressure, obstruction to the outflow of urine from the ureter, or the stripping of the capsule from the kidney. Further, the kidney during activity is tense and hard, and distends its capsule to the utmost. This conception of the glomerular function affords a complete explanation of the existence of a firm and inextensible capsule surrounding the kidney, as also of such phenomena as the maximum ureter pressure, the dependence of the rate of discharge of urine from the kidney upon the general blood pressure, and the degree of dilatation of the renal arterioles, &c. Applying

this theory to the study of the action of diuretics in animals in which the blood pressure has been lowered so far that propulsion can no longer occur, we obtain evidence as to the parts of the renal tubules acted upon by these different substances.—A. R. **Cushny**: The action of Senecio alkaloids and the causation of hepatic cirrhosis in cattle. Various species of Senecio (ragwort) have been shown to induce fatal poisoning in cattle and horses in South Africa, Canada, and New Zealand. The alkaloids of one of these species were isolated by Watt, and their pharmacological examination shows that they induce the same symptoms as the entire plant. The Senecio species in this country proved non-toxic, except the common groundsel (*S. vulgaris*), and extracts from the ragwort grown in Canada, where the plant is poisonous, proved devoid of action also. This may, however, be due to the season at which the plant was gathered.—G. **Buchanan**: Note on developmental forms of *T. brucei* (*pecaudi*) in the internal organs, axillary glands, and bone-marrow of the gerbil.—Captain W. B. **Fry**: A preliminary note on the extrusion of granules by trypanosomes.

Physical Society, June 9.—Prof. H. L. Callendar, F.R.S., in the chair.—W. **Mason**: The Lüders' lines on mild steel. Previous investigations have shown that Lüders' lines on specimens of mild steel and wrought iron, strained in tension, are inclined at about 50° to the axis of pull. For tests in compression the information available is not precise, and though the angle of the lines with the direction of the compression is commonly understood to be about 40°, some doubt has been thrown on this point. The author had found previously that the lines are well developed on the surface of mild steel tubes. Since it was easy to obtain a compressive stress of practically uniform distribution in tubes under end pressure, while at the same time a hoop tensile stress could be induced by internal fluid pressure, the author confined his attention to the lines on tubular specimens. These were of mild steel, either hot or cold drawn, and most of them were annealed. The Lüders' lines on the outer surface appeared at the yield point indicated by the extensometer, *i.e.* their appearance coincided with the commencement of the large "yield" strain. In all cases where there were lines on the inner and outer surfaces of a tube, an inner and outer line, and also the ends of these lines, were found to be radially opposite, showing that the lines were traces of surfaces or canals of disturbance which passed through the tube wall, and indicating, moreover, that the disturbance spread spirally onwards, and not outwardly from a line initially formed on the more severely stressed inner surface. The conclusion is drawn that the Lüders' surfaces have the same, or approximately the same, inclination to an axis of simple pull or simple push. With stresses of opposite sign at right angles to each other, the lines and surfaces are more inclined to the stress of greater intensity, and with equal intensities the surfaces are at about 45°.—Prof. S. P. **Thompson**: A new method of harmonic analysis by averaging selected ordinates. Assume with Fourier that the curve representing any periodic single-valued function of x may be expressed by the harmonic series

$$y = A_1 \sin x + A_2 \sin 2x + A_3 \sin 3x + \ldots\ldots + B_1 \cos x + B_2 \cos 2x + B_3 \cos 3x.$$

Then to find the coefficient of any term, A_n or B_n, it suffices—subject to a limitation stated below—to measure off on the curve $2n$ equidistant ordinates over one period, that is, spaced at successive intervals apart of π/n. Then, having reversed the sign of every alternate ordinate, the simple algebraic mean of them gives the coefficient sought. For cosine-coefficients the first ordinate must be taken at the origin, while for sine-coefficients the first ordinate must be taken at a point $\frac{1}{2}\pi/n$ from the origin. The process is much facilitated by the use of templates of transparent celluloid having equispaced vertical lines engraved upon them. They are laid down on the curve, and the values of the selected ordinates are thus readily measured off. For analysis of valve-motions, of alternating-current curves, of tidal observations, and diurnal magnetic variations, the method presents certain advantages, as it requires no multiplication of ordinates by sines or cosines.—Prof. S. P. **Thompson**: Demonstration of the subjective nature of the difference tone. Two tuning-forks of frequencies 3328 and 3584 were sounded loudly. On striking the second the difference tone was heard, but while the notes from the two forks seemed to come in a definite direction from an external source, the difference tone seemed to be located in the ear itself.—Sir George **Greenhill**: Spinning tops and gyroscopic apparatus. A 52-inch Otto bicycle wheel was shown mounted on an axle with ball bearings, and spun by hand with the point in a small cup, to serve as a spinning top visible to a large audience. The gyroscopic apparatus was made of an ordinary 28-inch bicycle wheel, the axle screwed into a stalk of a short length of rifle barrel, suspended from a lug on a bicycle hub; the hub is fastened to an iron bracket, which is bolted to the under side of a beam or sleeper, large enough to absorb vibration, and resting on two step ladders. The wheel is spun by hand, and the axle is projected to obtain any desired gyroscopic motion, undulating, looped, or with cusps. The wheel can be detached by unscrewing the pin through the lug, and can then be used like the large wheel as a spinning top, or as the "Top on the top of a Top" described in Maxwell's "Life." Put the wheel out of balance by a bar through the spoke and hold the axle, and it will serve as a pendulum, making oscillations however large, or complete revolutions, and the effect may be investigated of varying the angle of the axle with the vertical. —Prof. H. N. **Allen**: A model illustrating the passage of a light wave through quartz. If a crystal is so cut, and a wave sent through it in such a way as to avoid separation of the two component waves by double refraction, it is easy to construct models showing how a vibration gradually alters in form as it passes through the crystal. The model exhibited illustrates the passage of a wave originally plane polarised through a crystal which rotates the plane of polarisation of light sent along its axis (quartz).—Prof. A. **Anderson** and J. E. **Bowen**: The measurement of contact differences of potential. The paper describes two methods of measuring the contact differences of potential of pairs of metals. The first, or deflection, method depends on the property which a radio-active source has of destroying a field of electrostatic force in air, and the second, or null, method on the possibility of determining by means of such a source whether such a field exists between two plates at zero potential. Measurements were made on ten different metals, and it was found that both methods gave practically the same results provided that the time which was allowed to elapse between the two measurements was sufficiently small. The addition law was verified.—A. **Johnstone**: A short table of circular and hyperbolic functions for complex values of the argument.

Zoological Society, June 13.—Mr. E. T. Newton, F.R.S., in the chair.—H. G. **Plimmer**: Report on the pathological examination of rats caught in the Regent's Park and in the society's gardens. Five hundred rats had been examined between January 1 and May 17, all in a precisely similar manner. The spleen, lungs, glands, and blood were examined microscopically, and from any animal which looked in any way unhealthy cultures were made. The results were summarised as follows:—5 rats were caught in the park, and 495 in the gardens; 283 of these were males and 217 females. Three rats had tubercle, 10 had tapeworm cysts in the liver, 49 had *Trypanosoma lewisi* in their blood, 2 had empyema (not tubercular), 1 had a tumour of the lower jaw (the result of an old injury), and 1 had pleuritis and hydrothorax (not tubercular). Bacteria were found in 71 rats: in 40 in the lungs and in 31 in the spleen. Saccharomycetes were found in the lungs of 16 rats. Fleas were found on 4 rats, and lice on 3 rats. The general condition of the rats was very good, and in none was anything at all suspicious found. —Dr. R. E. **Drake-Brockman**: Antelopes of the genera Madoqua and Rhynchotragus found in Somaliland. The author made general remarks on all the dik-diks, and gave a short account of the species and subspecies, including the description of a new form.—Hon. Paul A. **Methuen**: An amphipod from the Transvaal. A detailed description of a new fresh-water gammarid of the genus Eucrangonyx found in caves in the Transvaal.—R. **Lydekker**: Three African animals. The first specimen was the skull of a

Somali rhinoceros, a race for which the author adopted the name *Rhinoceros bicornis somalicus*, Potocki. A klipspringer skull from northern Nigeria, characterised by its great width and the peculiar form of the lacrymal bone, was described as the type of a new race, *Oreotragus saltator porteusi*. Finally, a gazelle from Algeria was referred to a new species, *Gazella hayi*, agreeing approximately in size with *G. dorcas*, but distinguished by the much straighter and non-lyrate horns, each of which carried only about a dozen rings. The face-markings were approximate to those of *G. cuvieri*.—C. E. **Hellmayr**: A contribution to the ornithology of western Colombia. This memoir was based on a collection made by Mr. M. G. Palmer in 1908 and 1909, which, though numbering hardly 700 specimens, was of considerable interest and contained many rare species, and also furnished information of importance to students of zoogeographical problems.—Angel **Cabrera**: Subspecies of the Spanish ibex. The author dealt with the geographical distribution of, and the differences between, the various races, and described a new subspecies from the Sierra de Gredos, the type-specimen of which was in the Madrid Museum.

Linnean Society, June 15.—Dr. A. B. Rendle, F.R.S., vice-president, in the chair.—Miss H. M. **Cunnington**: The anatomy of *Enhalus acoroides*, Rich.—Prof. **Imms**: The life-history of *Croce filiformis*, Westw.—Papers on insect collections from the islands of the Indian Ocean, communicated by Prof. J. Stanley Gardiner. Eight papers were brought forward, four dealing with various groups of Hymenoptera, one with Lepidoptera, and three with Diptera. The first was by Prof. J. J. **Kieffer**, on parasitic Hymenoptera of the family Cynipidæ, or gall-wasps. This family appears to be poorly represented in the Seychelles; only eight species (all new) were found, none belonging to the gall-forming section of the family, but all to the zoophagous sections; their size as compared with that of many zoophagous Cynipidæ in other parts of the world is very small. The second paper was by the same author, dealing with the group of small and minute parasitic Hymenoptera known as Proctotrupoidea. A rich material of these was obtained, representing seven of the families into which the super-family Proctotrupoidea is divided, and consisting of sixty-six species, all new to science. These insects are very incompletely known, and several of the genera enumerated in the paper are also new. The third paper was on the bees obtained by the expedition to the Seychelles and Aldabra in 1908–9, by Prof. T. D. A. **Cockerell**, of the University of Colorado. It adds considerably to the previously known bee fauna of these islands, fifteen species being enumerated, eight of which are new to science. The author shows that the bees of the Seychelles consist of (i) an endemic element, composed partly of species without close allies elsewhere, and partly of species closely allied to forms found in other parts of the world, and (ii) certain widely spread species, perhaps introduced by man. The Aldabra bee fauna also contains an endemic element, as well as a single Madagascar species. This paper was followed by that of Mr. G. **Meade-Waldo** on the wasps (Diploptera) obtained by the expedition; it enumerates five kinds, but adds no species to the previous lists. Mr. J. C. F. **Fryer's** paper deals with all the Lepidoptera obtained by the expedition of 1908–9, excepting the plume-moths and the Tortrices and Tineina, which were worked out some time ago by Mr. Bainbrigge Fletcher and Mr. Meyrick respectively. Almost all the material from Aldabra, and some of that from the Seychelles, was collected by the author himself. The total number of Lepidoptera known from the Seychelles (including those dealt with previously by Mr. Fletcher and Mr. Meyrick) is now 240, of which more than 120 are peculiar to the islands. Mr. Fryer's own paper deals with 123 species, of which thirty are new. He states that these thirty are for the most part very distinct and well separated from their allies, while the non-peculiar species are mostly widely distributed, with a slight preponderance of African forms. With regard to Aldabra, sixty-six species are known from there, seven being, so far as is known, peculiar, while the rest all belong to African or Madagascar forms. The next two papers were by Mr. J. E. **Collin**, on two families of small and obscure flies, the Borboridæ and Phoridæ. All the material of these families is from the Seychelles Islands proper. There are nine species of Borboridæ, one of which is new, while the others are apparently of very wide distribution, some being identical with European and even with British species, while one is known from the East Indies, from Africa, and from South America. Of the Phoridæ there are twenty species, fourteen of which have not previously been described. The last paper was by Mr. F. V. **Theobald**, on the mosquitoes obtained by the expedition. There are nine kinds of Culicidæ known from the islands, five of them being new to science. One of these new forms was found by Mr. Fryer in Aldabra, and is named after him *Culicelsa fryeri*; the other four were found in the Seychelles, two of them being included in a new genus (Pseudoficalbia). Other species are of very wide distribution, one of them being the almost world-wide *Stegomyia fasciata*, notorious as the carrier of yellow fever. None of the malaria-conveying forms were found in the Seychelles.—F. **Summers**: Coast vegetation of south-west Lancashire.

PARIS.

Academy of Sciences, June 12.—M. Armand Gautier in the chair.—A. **Haller** and Edouard **Bauer**: 2 : 6-dibenzoyl-2 : 6-dimethylheptane and $\alpha\alpha$-tetramethylpimelic acid. The sodium derivative of a dialkylacetophenone,

$$RR\,CNa—CO.C_6H_5,$$

is treated with a dibromide, $Br.(CH_2)_n.Br.$, and the resulting diketones converted into benzene and the amide $NH_2.CO.C(RR').(CH_2)_n.C(RR').CO.NH_2$ by means of sodium amide. An example of this general method has been worked out, in which R and R′ are methyl groups, and the bromide $Br.(CH_2)_3Br$.—Pierre **Termier** and Jean **Boussac**: The exotic character of gneiss and granite complex known as the crystalline *massif ligure*, and the separation of the Apennines and the Alps.—M. Zaboudski was elected a correspondant for the section of mechanics in succession to the late M. Sire, and E. Perroncito a correspondant for the section of rural economy in succession to the late M. J. Kühn.—M. **Luizet**: The form of the curve of light of the variable star δ Cepheus obtained from the observations of Argelander. The discontinuity in the curve of luminosity of this star deduced by Argelander from his observations is shown not to exist. A curve is given embodying the results of various observers, and this is without a break. It is shown, moreover, that Argelander's own observations fall on this curve.—Marcel **Riesz**: A method of summation equivalent to the method of arithmetical means.—J. **Le Roux**: Incurvation and flexion in finite deformations.—Louis **Wertenstein**: An extremely absorbable ionising radiation emitted by radium C. Radium C gives off an ionising radiation which is relatively intense, with penetrating power analogous to that of radio-active projections, and slightly deviable by the magnetic field. It is probably the projection of radium D by radium C.—G. **Reboul**: Conductivity accompanying chemical reactions.—Luigi **Giuganino**: The action of terrestrial translation upon the phenomena of light.—G. **Moreau**: The corpuscular ionisation of saline vapours and the recombination of the ions of a flame.—Georges **Meslin**: Circular double refraction in sodium chlorate. The author has constructed a triprism of sodium chlorate similar to the quartz triprism of Fresnel. Sodium chlorate possesses rotatory power, but differs from quartz in having no ordinary double refraction. The expected separation of the green mercury line into two components was clearly proved.—Miroslaw **Kernbaum**: The decomposition of water by metals. A repetition of Traube's experiments on the simultaneous production of hydrogen and hydrogen peroxide by the action of zinc and other metals upon water. The non-production of hydrogen in the absence of dissolved oxygen is confirmed, but, contrary to Traube's results, some hydrogen always appears to be formed.—J. B. **Senderens** and J. **Aboulenc**: The catalytic preparations of fatty esters in the wet way. The addition of potassium bisulphate to an equimolecular mixture of acetic acid and ethyl alcohol causes a marked increase in the amount of ethyl acetate formed in a given time. The use of sulphuric acid in the preparation of esters is discussed from this point of view.—Jean **Niviere**: The action of isobutylamine and di-isobutylamine upon

α-bromobutyric acid. Isobutylamine gives α-isobutylaminobutyric acid; di-isobutylamine gives only α-oxybutyric acid.—G. **Vavon**: The addition of hydrogen to limonene. In presence of platinum black hydrogen is added to limonene in two phases, a dihydride being first formed and a tetrahydride the final product. Some reactions of the dihydride are given.—André **Meyer**: Azomethines derived from phenylisoxazolone.—Ch. **Mauguin**: The orientation of liquid crystals by the magnetic field.—Fernand **Guéguen**: A new organ differentiated from the thallus of Mucor.—A. **Prunet**: Various methods of plant pathology and therapeutics.—Marcel **Dubard**: The classification of Lucumæ with functiform radicle.—L. **Gain**: Two new species of Nostoc from the South American Antarctic region.—Marc **Bridel**: Meliatine, a new glucoside hydrolysable by emulsin extracted from *Menyanthes trifoliata*.—B. **Sauton**: Germination *in vivo* of the spores of *Aspergillus niger* and *A. fumigatus*.—L. **Launoy**: Can the guinea-pig be accustomed to strychnine? The tolerance of the guinea-pig to strychnine can be increased experimentally to a considerable extent.—K. **Landsteiner**, C. **Levaditi**, and C. **Pastia**: Research on the virus contained in the organs of an infant attacked by acute polymyelitis.—M. **Maisonneuve**: The ovarian apparatus of Cochylis.—P. A. **Dangeard**: The fecundation of the ciliated infusoria.—A. **Magnan**: The relation between the ventricle and gizzard in birds.—A. **Desgrez**: The toxicity of two new nitriles and the antitoxic action of sodium hyposulphite towards one of them.—A. **Chauchard** and Mlle. B. **Mazoué**: The action of ultra-violet light upon amylase, invertine, and on a mixture of these two diastases.—A. **Joly**: The existence of limestones with flints (Eocene) in the Zarez Mountains, Algeria.—Raoul **Blanchard**: The glacial deposits at Rives.—Louis **Gentil**: A panorama of the Middle Mlouya (eastern Morocco).

June 19.—M. Armand Gautier in the chair.—J. **Boussinesq**: Simple construction (having recourse only to the two ellipsoids, inverse and direct) for light rays for each of the two systems of plane waves of given direction propagated in a transparent crystal.—C. **Guichard**: Certain triple orthogonal systems deduced from curves several times isotropic.—E. **Vessiot**: The kinematics of continuous media of *n* dimensions.—J. **Hadamard**: Slow permanent movement of a viscous sphere in a viscous liquid medium.—E. **Delassus**: The material realisation of linkages.—Louis **Roy**: Discontinuities of the first order in the movement of flexible threads.—Jules **Courmont** and Ch. **Nogier**: Progressive diminution of output in the ultra-violet with quartz mercury lamps working at high temperatures. The chemical, physical, and physiological actions of the light from mercury vapour lamps in quartz tubes falls off steadily when they are used at high temperatures. This seems to be due partially to the formation, on the interior surface, of a greyish coating (possibly a silicate of mercury). The lamps should be cooled during use.—Henri **Malosse**: Photometer for the control of the illuminating power of public or private lamps.—A. **Guillet**: A regulator depending on synchronisation.—A. **Leduc**: New method for determining γ, the ratio of the specific heats of vapours.—L. **Decombe**: The heat of Siemens.—C. **Caudrelier**: Frequency of electric oscillations in sparks.—F. **Grenet** and P. **Boulenger**: Porcelain filtering funnels.—J. **Meunier**: Spectra produced by the combustion of hydrocarbons and of various metals. The spectra produced by the combustion of magnesium, zinc, cadmium, nickel, copper, lead, bismuth, and antimony are described.—Georges **Baume** and F. Louis **Perrot**: Melting-point curves for mixtures of gases: systems formed from carbon dioxide and sulphuretted hydrogen with methyl alcohol and methyl ether. Melting-point curves for the systems $(CH_3)_2O—CO_2$,

$CH_3OH—CO_2$, $(CH_3)_2O—H_2S$, and $CH_3OH—H_2S$

were obtained, but only in the case of $(CH_3)_2O—H_2S$ was the existence of an oxonium compound, $(CH_3)_2O+H_2S$, indicated.—Paul **Bary**: Osmotic phenomena in non-conducting media. Experiments on solutions of indiarubber and acetyl-cellulose proved that such colloids are to be considered as solid solvents, and that the permeability, for a given substance of a colloidal membrane, will be proportional to the solubility of that substance in the colloid.—Pierre **Jolibois**: The allotropic modifications and the melting point of arsenic. Grey arsenic is stable at all temperatures up to 850°; arsenic deposited as a mirror is unstable, and changes to grey arsenic at about 280° with production of heat. The melting point of grey arsenic determined by two methods is 850°±10.—Max. **Wunder** and B. **Jeanneret**: The action of syrupy phosphoric acid on various alloys obtained in the electric furnace. Many metals and alloys thus obtained, although very resistent to the action of most reagents, are attacked by hot phosphoric acid of specific gravity 1·75. Silicon, zirconium, ferro-silicon, ferro-titanium, ferro-vanadium, manganese silicide, titanium nitride, nickel boride, and even carborundum are all attacked. If carbon be present it remains wholly or partially undissolved.—Mlle. Pauline **Lucas**: Dehydration of alkyl and benzyl-isobutylphenyl-carbinols. Tertiary alcohols are produced by the action of organo-magnesium compounds on trialkyl acetophenones. These on dehydration give hydrocarbons containing a double bond.—L. H. **Phillipe**: Glucodecose and glucodecite.—Jakob **Erikson**: The mildew of mallow (*Puccinia malvacearum*); its nature and phases of development.—Jacques **de Lapparent**: The Permian eruptive rocks of the Pic du Midi d'Ossau.—Paul **Godin**: Variations in the size of the bodies of males during post-fœtal growth.—J. **Le Goff**: Glycosuria and saccharosuria in healthy subjects, following the absorption of saccharose.—V. **Balthazard** and Maurice **Nicloux**: Coefficient of toxicity in poisoning by carbon monoxide.—Mme. Marie **Phisalix**: Effects of the bite of a venomous lizard from Arizona (*Heloderma suspectum*).—F. **Picard**: Some points in the biology of *Conchylis ambiguella* and of *Polychronis botrana*.—P. **Sisley**, Ch. **Porcher**, and L. **Panisset**: The action of micro-organisms on some types of colouring matters.—L. **Cayeux**: The transformations of the *massif* of the Cyclades at the end of the Tertiary and the beginning of the Quaternary epochs.—Maurice **Lugeon**: A local inversion of the slope of the rocky bed of the Rhone, below Bellegarde.—E. A. **Martel**: The exaggerations of glacial theories.

CALCUTTA.

Asiatic Society of Bengal, June 7.—Rai B. A. **Gupte**: Folklore of the origin of the constellation Mrigashirsha. The folklore seems to have been based on the shape of the constellation known as Mriga Nakshatra in India and Orion in the west. It says that on the borders of the southern land there was a hunter who was locked up by his creditors in a Shiva's temple, and had to fast. His creditor was paid out of a subscription raised in the temple, and he was released. He went to *Shikár*. During the night one antelope came to the *Bael* tree on which he was sitting. She spoke to him in the human voice, and was allowed to go on promising that she would return. Another came; she promised return, and was allowed to go. Then came a black buck. He was also allowed to go. Lastly came a doe with young ones. They were members of one united family. They held consultation, and decided that they should all present themselves before the hunter for being killed. But the sun rose, and with it there came a change in the disposition of the hunter, due to the fact that he had to fast and to keep up all the night on the sacred Shivarātra-day, dropping *Bael* leaves on a *lingam*. Shiva's agents came to the spot, took the hunter to Kailás, and sent the antelope family to the Starry Heaven, that is, Nakshatralök, and blessed them, saying that they would form in heaven a constellation which should be known as Mriga Nakshatra. In examining the constellations and the signs of the Zodiac in connection with this story, the author found that the position of Sagittarius the hunter suggests the origin of the Shivapanchāyatan, or five in one, in the four signs of the Zodiac, viz. Taurus the Bull, Gemini the Ugma of Shiva, Cancer his *Ganás*, with their chief or *ish* Ganesh, and Leo the Lion. Comparing these signs with the group of Shiva and Pārvati, the resemblance becomes so striking that it would be difficult to call it a coincidence. Shiva and Pārvati therefore have their origin in a myth based on the Zodiac.—W. **Kirkpatrick**: A vocabulary of the Pàsi Boli or Argot of the Kunchandiya Kanjars. Kanjar

is the generic name for a number of Indian tribes of a gypsy character, from Sanskrit kánana chará, in the sense of a wanderer in the jungle. Like the gypsies of Europe, the Kanjar and other wandering tribes of known predatory habits have a secret language or cant of their own. The collection given appears to be chiefly based on Hindi, with certain inflections which are attached to the verbal root implying that there is consistence and character in the cant, and perhaps that some of the inflections are from an old form of language now obsolete in modern colloquial Hindustani. Many of the words, however, seem to have no connection with known languages spoken or written in India, nor with any of the various slang or secret codes of other recognised wandering tribes of Dravidian origin. The Argot of European gypsies known as Romanes or Romni similarly has numerous words identical with modern Hindustani, while its Oriental, if not Indian, origin is generally accepted. The Romanes word for dog is *Jookel* or *Jukal*, while the Kanjar word is *Jhukal*. There are other resemblances and exactly identical words apparently common only to Romanes and Kanjar cant. A bibliography of references to the Kanjar and allied tribes is appended, with a list of various secret codes and slang languages, and also gypsy vocabularies.—Lieut.-Colonel D. C. **Phillott**: Some notes on Urdu grammar.

FORTHCOMING CONGRESSES.

JUNE 28, 29.—Conference on Education and Training of Engineers. London. President: Mr. Alexander Siemens, President of the Institution of Civil Engineers. General Secretary: Dr. J. H. T. Tudsbery.

JULY 18–22.—International Association of Seismology. Manchester. President: Prof. Arthur Schuster, F.R.S.

JULY 25–28.—British Medical Association. Birmingham. President: Sir H. T. Butlin, Bart.

JULY 26–29.—First Universal Races Congress. University of London. President: Lord Weardale. General Secretary: G. Spiller, 63 South Hill Park, Hampstead, London.

JULY 29–AUGUST 5.—Congress of French Geographical Societies. Roubaix. President: Prince Roland Bonaparte.

JULY 30–AUGUST 2.—Annual Meeting of the Swiss Society of Natural Sciences. Soleure. President: Dr. A. Pfaehler. Inquiries to Secretaries: Dr. Küng (German) and Prof. Brönnimann (French).

JULY 31–AUGUST 5.—French Association for the Advancement of Science. Dijon. President: M. Charles Lallemand. Secretary: Dr. Desgrez, 28 Rue Serpente, Paris.

AUGUST.—Centenary of the Foundation of the University of Breslau.

AUGUST 12–18.—First International Congress o Pedology. Brussels. President: M. Alexis Sluys. Secretary: M. Vital Plas, 35 Avenue Paul de Jaer, Brussels.

AUGUST 13–20.—Prehistoric Society of France. Nimes.

AUGUST 31–SEPTEMBER 6.—British Association. Portsmouth. President: Sir William Ramsay, K.C.B., F.R.S. Address for inquiries: General Secretaries, Burlington House, W.

SEPTEMBER 4–6.—Centenary of the University of Christiania. President of Festival Committee: Prof. Brögger.

SEPTEMBER 9–20.—International Congress of the Applications of Electricity. Turin. President of the Committee of Honour: H.R.H. the Duke of the Abruzzi. Honorary Secretary of the Committee: Signor Guido Semenza, Via S. Paolo 10, Milano. International Secretary: Col. R. E. Crompton, C.B., R.E., Crompton Laboratory, Kensington Court, W.

SEPTEMBER 24–30.—International Congress on Tuberculosis. Rome. Address for inquiries: Honorary Secretary of the National Association for the Prevention of Consumption, 20 Hanover Square, W.

OCTOBER 2–7.—Third International Congress of Hygiene. Dresden. General Secretary: Dr. Hopf, Reichsstrasse 4, Dresden.

OCTOBER 15–22.—Tenth International Geographical Congress. Rome. President: Marquis Raffaele Cappelli. General Secretary: Commander Giovanni Roncagli, Italian Geographical Society, Rome.

DECEMBER 27.—American Association for the Advancement of Science. President: Dr. C. E. Bessey, University of Nebraska. Permanent Secretary: Dr. L. O. Howard, Smithsonian Institution, Washington, D.C.

DIARY OF SOCIETIES.

THURSDAY, JUNE 29.

ROYAL SOCIETY, at 4.30.—On a New Method of Estimating the Aperture of Stomata: Francis Darwin, F.R.S., and Miss D. F. M. Pertz.—Memoir on the Theory of the Partitions of Numbers. Part VI. Partitions in Two-dimensional Space, to which is added an Adumbration of the Theory of the Partitions in Three-dimensional Space: Major P. A. MacMahon, F.R.S.—The Kinetic Theory of a Gas constituted of Spherically Symmetrical Molecules: S. Chapman.—Radiation in Explosions of Coal Gas and Air: W. T. David.—The Mechanical Viscosity of Fluids: Dr. T. E. Stanton.—A Silica Standard of Length: Dr. G. W. C. Kaye.—The Properties of Oil Emulsions: R. Ellis.—(1) On a Class of Parametric Integrals and their Application in the Theory of Fourier Series; (2) On a Mode of Generating Fourier Series: Dr. W. H. Young, F.R.S.—Pendulum Clocks and their Errors: A. Mallock, F.R.S.—On Ceratopora, the Type of a New Family of Alcyonaria: Prof. S. J. Hickson, F.R.S.—Note on the Sensibility of the Eye to Variations of Wave Length: Prof. W. Watson, F.R.S.—And other Papers.

FRIDAY, JUNE 30.

PHYSICAL SOCIETY, at 5.—On the Effect of a Narrow Saw-cut in the Edge of a Conducting Strip on the Stream Lines in the Strip and on the Resistance of the Strip: Prof. C. H. Lees, F.R.S.—The Capacity Coefficients of Spherical Electrodes: Dr. A. Russell.—Exhibition of the Benkö Primary Battery: W. R. Cooper.

MONDAY, JULY 3.

ARISTOTELIAN SOCIETY, at 8.—Emotional Experiences of some Higher Mystics: Rev. A. Caldecott.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Explorations in Dutch New Guinea: Capt. C. G. Rawling, C.I.E.

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