

expanded on publications was so great as to hinder the activity of the societies in other directions.

Sir Alexander Pedler, F.R.S., explained how the British Science Guild had sought to relieve the scientific societies by endeavouring to obtain a reduction in the rate of postage of their publications, but he much regretted that the Postmaster-General, though sympathetic, could not see his way to grant such relief. Some of the delegates suggested a renewal of the application, but it seemed unlikely that this would be successful. The general question of founding a publication fund was discussed by representatives of many scientific societies, including the Chemical, the Royal Astronomical, the Zoological, the Entomological, the Royal Anthropological Institute, and the Institution of Mining Engineers.

In a paper on the financial position of our local societies, Mr. John Hopkinson sketched the history of the Hertfordshire Natural History Society, and showed how a society which had always struggled with a small income had yet managed to publish excellent original work.

Although the opinion of the conference was generally favourable to the formation of a publication fund, a few speakers expressed the opinion that it would be inexpedient to take any step which might tend to increase the publications of local societies, inasmuch as the mass of such literature was already embarrassing to the bibliographer.

On the afternoons of Monday and Tuesday the delegates visited, under scientific guidance, the Natural History Museum and the Zoological Gardens.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—An election to the Clerk-Maxwell scholarship will take place at the end of this term. Candidates are requested to send in their names to Sir J. J. Thomson on or before December 1.

Dr. G. H. F. Nuttall has been re-elected to the Quick professorship of biology. Mr. J. S. Gardiner has been elected to the professorship of zoology and comparative anatomy. Mr. E. O. Lewis has been appointed demonstrator of experimental psychology until Michaelmas, 1911; and Mr. D. G. Lillie has been elected to a Hutchinson research studentship for natural science.

Mr. H. F. Tiarks has supplemented Messrs. J. Henry Schröder and Co.'s gift of an endowment of a professorship of German by placing at the disposal of the University the sum of 5000l. for the endowment of one or more scholarships for the encouragement of the study of German in the University.

It is announced in *Science* that Mr. Andrew Carnegie has subscribed 20,000l. to McGill University as a part of the general fund of 400,000l. which friends of the University are trying to raise.

THE Black Bear Press, Cambridge, has sent us a copy of the first issue of a new weekly magazine, the *Gownsmen*, which is to be a record and comment of university life. The contents range over every department of university activity—academic, athletic, social—and the periodical should appeal to all Cambridge men, past and present. With this first issue is published, as a supplement, an excellently reproduced portrait of Sir Joseph Thomson, F.R.S. The price of the new publication is 2d. weekly.

THE annual meeting of the Association of Teachers in Technical Institutions will be held on November 6 at St. Bride Institute, Fleet Street, E.C. The chair will be taken at 3 p.m. by Mr. J. Wilson, who is the president of the association for the coming year. The report of the council will contain an abstract of the educational and professional work accomplished during the year. The educational work comprises the consideration of such questions as syllabuses in such subjects as applied mechanics and electrical engineering, the training of craftsmen, the preliminary training of technical students, and the Royal Commission on university and higher education in London.

IN his inaugural address, at the beginning of the present session, the president of Harvard University, Dr. A.

Lawrence Lowell, discussed an ideal college training from three points of view. He considered the highest development of the individual student, the proper relation of the college to the professional school, and the relations of the students to one another. Each line of thought led him to the same conclusion. The best type of liberal education in our complex modern world aims at producing men who know a little of everything, and something well. The essence of a liberal education, said Dr. Lowell, consists in an attitude of mind, a familiarity with methods of thought, an ability to use information rather than a memory stocked with facts, however valuable such a storehouse may be. No method of ascertaining truth, and therefore no department of human thought, ought to be wholly a sealed book to an educated man. It has been truly said that few men are capable of learning a new subject after the period of youth has passed, and hence the graduate ought so to be equipped that he can grasp effectively any problem with which his duties or his interest may impel him to deal. In the present age some knowledge of the laws of nature is an essential part of the mental outfit which no cultivated man should lack. He need not know much, but he ought to know enough to learn more. To him the forces of nature ought not to be an occult mystery, but a chain of causes and effects with which, if not wholly familiar, he can at least claim acquaintance; and the same principle applies to every other leading branch of knowledge.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 26.—M. Bouchard in the chair.—E. L. **Bouvier**: The phenomena which characterise the change of nest in the ant *Messor barbarus*. A detailed account of the curious habits of these ants when exchanging nests.—M. **Gouy**: The constitution of the electric charge at the surface of an electrolyte.—Armand **Gautier**: Remarks on the second International Congress for the Repression of Fraud in Food and Drugs, held at Paris, October 18 to 23.—J. **Guillaume**: Observations of the sun made at the Observatory of Lyons during the second quarter of 1909. Observations were possible on sixty-three days, the results being summarised in three tables showing the number of spots, their distribution in latitude, and the distribution of the faculæ in latitude.—Charles **Nordmann**: The temperature of β Perseus (Algol). Taking 6000° as the temperature of the sun, the application of Planck's law leads to 22,900° as the temperature of Algol. This is nearly identical with the temperature (23,800°) found previously by a totally independent method.—M. **Javelle**: Halley's comet. Observations of the comet made with the large equatorial at Nice. On October 12 it appeared as a small round nebulosity, 10" to 15" in diameter, with a central nucleus of the fourteenth to fifteenth magnitude.—R. **Jarry-Desloges**: Observations on the surface of the planet Mars. Two diagrams accompany this paper, showing the details perceived during July, August, and September, 1909.—G. **Athanasiadis**: The influence of temperature on the phenomena of polarisation in the electrolytic valve. The potential difference, producing a definite current in the electrolytic valve, diminishes as the temperature increases.—L. **Gay**: The vapour pressure of mixed liquids. A new demonstration and generalisation of the formula of Duhem-Margules.—G. **Belloc**: The emission of gases by heated metals. A definite volume of gas can be extracted by heating a metal such as steel to a definite temperature in a vacuum. If the metal is allowed to cool, the vacuum being maintained, a re-heating to the same temperature after an interval of some days gives rise to a fresh amount of gas, and this process can be continued; even after seven heatings small amounts of gas continue to be evolved.—Maurice **Coate**: The transformations of selenium. Exact measurements of the density of selenium submitted to various treatments have been made.—E. **Cornec**: Cryoscopic study of the neutralisation of some acids.—Maurice **Barrée**: The points of transformation of the copper-aluminium alloys as determined by a study of the variation of electrical resistance with temperature.—Georges **Darzens** and M. **Rost**: Hexahydrophenylacetylene and hexahydrophenylpropionic acid. Starting this hexahydroacetophenone,

$C_6H_5.CO.CH_3$, this was converted into $C_6H_5.CCl:CH_2$ by the action of phosphorus pentachloride, and from this hexahydrophenylacetylene is obtained by the action of potash. The sodium derivative of this, with carbon dioxide, gave sodium hexahydrophenylpropionate, some derivatives of which are described.—**H. Arsandaux**: Contribution to the study of the laterites.—**Marin Moliard**: Can the amines serve as food for the higher plants? Contrary to the results of Ville and of Lutz, the author's experiments lead to the conclusion that none of the amines can act as food substances for the higher plants.—**I. Borcea**: The origin of the heart, the vascular migratory cells, and the pigmentary cells in the Teleostea.—**A. Imbert**: The fatigue produced by rapid movements.—**C. Fleig**: The action of radio-active mineral waters and of artificial serums on the survival of organs or isolated cellular elements of the body.—**Maurice de Rothschild** and **Henri Neuville**: Remarks on the okapi.—**A. Monvoisin**: The acidity of the milk of tuberculous cows. The low acidity of tuberculous milks depends principally upon the diminution in the amount of casein present.—**Alfred Angot**: The earthquake of October 20-21, 1909. The seismograph records at the Parc Saint-Maur Observatory indicate that this earthquake, no mention of which occurs in the newspapers, must have been very violent. Its epicentre was probably in the Himalayas or neighbouring mountainous regions.—**E. A. Martel**: The subterranean river of Labouiche or La Grange (Ariège).—**V. Crémieu**: A new determination of the Newtonian constant. The torsion-balance method, described in a previous paper by the author, gives a value of $K=6.674 \times 10^{-8}$, the accuracy estimated being of the order of 1 in 10,000.—**H. Hildebrand Hildebrandsson**: Some remarks on the temperatures of summer in various parts of Europe.

CALCUTTA.

Asiatic Society of Bengal, October 6.—**J. C. Brown**: Stone implements from the Tongyueh district, Yunnan Province, western China (with a short account of the beliefs of the Yunnanese regarding these objects). A description of a representative series of twelve stone implements selected from numerous specimens recently examined in Tongyueh is given. Nine of these specimens are fashioned from varieties of jadeite, the other three being cut from red slate-like, white quartzite, and igneous rocks. The Yunnanese attribute a celestial origin to these stones, which they believe to possess occult medicinal properties and to be efficacious in the treatment of obdurate diseases in which the medical treatment has failed to produce any beneficial results. Descriptions of the specimens are subjoined.—**H. E. Stapleton**: (1) An alchemical compilation of the thirteenth century A.D.; (2) contributions to the history and ethnology of north-eastern India, i.

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 4.

ROYAL SOCIETY, at 4.30.—(1) The Development of *Trypanosoma Gambiense* in *Glossina palpalis*; (2) A Note on the Occurrence of a Trypanosome in the African Elephant: Colonel Sir David Bruce, C.B., F.R.S., Captains A. E. Hamerton and H. R. Bateman, R.A.M.C., and Captain F. P. Mackie, I.M.S.—On the Perception of the Direction of Sound: The Lord Rayleigh, O.M., F.R.S.—The Diffraction of Electric Waves: Prof. H. M. Macdonald, F.R.S.—On the Mechanism of the Absorption Spectra of Solutions: Robert Houstoun.—(1) Note on the Spontaneous Luminosity of a Uranium Mineral; (2) The Accumulation of Helium in Geological Time, II: Hon. R. J. Strutt, F.R.S.—On the Physical Properties of Gold Leaf at High Temperatures: J. C. Chapman and H. L. Porter.—The Dimensions and Function of the Martian Canals: Dr. H. C. Pocklington, F.R.S.

LINNEAN SOCIETY, at 8.—Some Account of the Field-botany of Namaqualand, Damaraland, and South Angola: Prof. H. H. W. Pearson.

RÖNTGEN SOCIETY, at 8.15.—Presidential Address: C. E. S. Phillips.

FRIDAY, NOVEMBER 5.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.30.—Huxley Memorial Lecture. The North European Race: Prof. G. Retzius.

MONDAY, NOVEMBER 8.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Journeys in Bhutan: J. Claude White.

TUESDAY, NOVEMBER 9.

ZOOLOGICAL SOCIETY, at 8.30.—Some Living Shells, their Recent History, and the Light They Throw on the Latest Physical Changes in the Earth: Sir Henry H. Howorth, K.C.I.E., F.R.S.—The Asiatic Fishes of the Family Anabantidae: C. Tate Regan.—On a Small Collection of Mammals from Egypt: J. Lewis Bonhote.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Single-phase Electrification of the Heysham, Morecambe and Lancaster Branch of the Midland Railway: J. Dalziel and J. Sayers.—The Equipment and Working-Results of the Mersey Railway under Steam and under Electric

Traction: J. Shaw.—The Effect of Electrical Operation on the Permanent-Way Maintenance of Railways as Illustrated on the Tynemouth Branches of the North-Eastern Railway: Dr. C. A. Harrison.

THURSDAY, NOVEMBER 11.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Vacuolation of the Blood-platelets—An Experimental Proof of their Cellular Nature: H. C. Ross.—Further Results of the Experimental Treatment of Trypanosomiasis—being a Progress Report to a Committee of the Royal Society: H. G. Plimmer and Captain W. B. Fry.—*Hillhousea mirabilis*, a Giant Sulphur Bacterium: G. S. West and B. M. Griffiths.—The Modes of Division of *Spirochaeta recurrentis* and *S. duttoni* as observed in the Living Organism: H. B. Fantham and Miss A. Porter.

MATHEMATICAL SOCIETY, at 5.30.—Annual General Meeting.—(1) The Ordinal Relations of the Terms of a Convergent Sequence; (2) The Application to Dirichlet's Series of Borel's Exponential Method of Summation; (3) Theorems relating to the Summability and Convergence of Slowly Oscillating Series: G. H. Hardy.—Notes on Synthetic Geometry: Prof. W. Esson.—Kummer's Quartic Surface as a Wave Surface: H. Bateman.—The Green's Function in a Wedge, and Other Problems in the Conduction of Heat: Prof. H. S. Carslaw.—The Envelope of a Line cut Harmonically by two Conics: J. L. S. Hatton.—On a Case of *q*-Hypergeometric Series: Rev. F. H. Jackson.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Presidential Address: Dr. Gisbert Kapp.

FRIDAY, NOVEMBER 12.

PHYSICAL SOCIETY, at 8.—On the Absorption Spectrum of Potassium Vapour: P. V. Bevan.—Some Further Notes on the Physiological Principles underlying the Flicker Photometer: J. S. Dow.—Exhibition of a Colour-perception Spectrometer: Dr. F. W. Edridge-Green.—Tables of Ber and Bei and Ker and Kei Functions, with Further Formulæ for their Computation: H. G. Savidge.

ROYAL ASTRONOMICAL SOCIETY, at 5.

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