

As the contributions toward the re-endowment of Oxford University have reached a total of more than 100,000l., the second donation of 10,000l. promised by Mr. W. W. Astor has now been received by Lord Curzon of Kedleston, the chairman of the fund.

On July 10 the administrative staff of the technological branch of the Board of Education will remove from South Kensington to the new offices of the Board in Westminster. All correspondence on and after July 9 should be directed to the secretary, Board of Education, Whitehall, with the exception of letters for the Victoria and Albert Museum, the Royal College of Art, and the Solar Physics Observatory, which should continue to be addressed to the offices of the Board of Education, South Kensington.

On Tuesday, July 7, the King, accompanied by the Queen, opened the new buildings of the University of Leeds. In the course of his reply to an address presented by the Vice-Chancellor, the King said:—"My interest in the great cause of education is well known, and I note with gratification the ever-widening basis of the instruction now undertaken by our great educational institutions. The high standard of moral and intellectual discipline for which our schools and universities have been distinguished has not been lowered, nor has the pursuit of literary and historical studies been checked by the inclusion in the university curriculum of those scientific studies, and especially of those branches of applied science for which such ample provision has now been made. I rejoice to think that the opportunities open to the young men of our great industrial communities of acquiring a knowledge of subjects of commercial utility in an atmosphere of academic culture are being so greatly increased, and I find it difficult to express my appreciation of the manner in which the great responsibilities which rest with the authorities and teachers of a university such as this have been discharged. It is a source of pleasure to me to know that you have provided also for the study of the theory and practice of agriculture, for I am convinced that the best possible results cannot be derived from the industry and natural ability of our farmers unless they are properly instructed in the scientific aspects of their work." When the University was founded, the Privy Council stipulated that a building fund of 100,000l. should be formed, and this amount has now been raised. The new buildings include a number of independent blocks, namely:—(1) extension of main buildings, providing accommodation for arts subjects, zoology, and botany, including new botanical and zoological laboratories; (2) extension of present engineering laboratory in a separate large wing at the rear of the main building; (3) large new block of buildings for electrical engineering; (4) large new block of buildings for mining, fuel, and metallurgy; (5) large temporary building for physical laboratory and organic chemistry laboratory. Increased support from the Treasury is needed if the work provided for in these new buildings is to be carried on efficiently. We hope to give an account of the new buildings in our next issue.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society. June 3.—Mr. H. Rowland-Brown, vice-president, in the chair.—*Exhibits.*—H. St. J. Donisthorpe: Pseudogynes of *Formica sanguinea*, caused by the presence of the beetle *Lomechusa strumosa* in the nest, from the New Forest.—H. J. Turner: Living larvæ of *Coleophora maritimella* on *artemisia*, and also a species of Asilidæ and its prey.—C. J. Gahan: (1) Living specimens of a "leaf-insect" from the Seychelles, bred in England by Mr. St. Quentin, probably *Pulchriphyllium curvifolium*, S.; (2) some Lampyridæ of considerable interest collected by Mr. E. E. Green in Ceylon, and including both sexes of the genera *Lamprigera* and *Diopoma*, the females of which had hitherto been unknown, those of both genera being larviform. Attention was directed also to the existence in China, Ceylon, and the Malay Peninsula of remarkable larviform females greatly resembling in form the females of the American group *Phengodini*, and being somewhat similarly provided with rows of luminous points.—G. C. Champion: Specimens

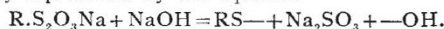
of *Dromius angustus*, Brullé, and *Cryptophagus lovendali*, Ganglb., recently recorded by him from Woking and the New Forest respectively; also two species of the Staphylinid genus *Leptotyphlus* and one of the Curculionid genus *Alaocyba*, the exhibitor mentioning that these extremely minute blind insects were much smaller than any known British representatives of the S. European groups in question.—Colonel C. Swinhoe: Several boxes of butterflies taken during the present year (1908) in the Canary Islands, chiefly from Grand Canary and Tenerife. Colonel Swinhoe observed that, with the exception of *Lycaena webbianus*, all the species met with suggest a foreign origin.—*Papers.*—Notes on the value of the genitalia of insects as guides in phylogeny: W. Wesche.—Certain Nycteribiidæ, with descriptions of two new species from Formosa: Hugh Scott.—Further studies of the Tetriginæ (Orthoptera) in the Oxford University Museum: Dr. J. L. Hancock.—Mimicry in tropical American butterflies: J. C. Moulton.—Hereditry in *Papilio dardanus* from Natal, bred by Mr. G. F. Leigh, of Durban: Prof. E. B. Poulton.—New species of Hesperidiidæ from Central and South America: H. H. Druce.

Royal Meteorological Society, June 17.—Dr. H. R. Mill, president, in the chair.—The Hong Kong typhoon of September 18, 1906: L. Gibbs. Judged by anemometer records, the typhoon was by no means a severe one, as the highest average hourly wind velocity was seventy miles.—An elementary explanation of correlation, illustrated by rainfall and depth of water in a well: R. H. Hooker.

Chemical Society, June 18.—Sir W. Ramsay, K.C.B., F.R.S., president, in the chair.—The thermal decomposition of hydrocarbons, part i., methane, ethane, ethylene, and acetylene: W. A. Bone and H. F. Coward. The results of a systematic investigation of the modes of decomposition of the four hydrocarbons at temperatures between 500° and 1200° were described, and it was shown that methane, which is by far the most stable of the four hydrocarbons, and a principal product of the decomposition of the other three, decomposes for the main part directly into carbon and hydrogen. The methane formed during the decomposition of the other three hydrocarbons can be explained on the supposition that "residues" such as :CH and :CH₂ are directly "hydrogenised" in an atmosphere rich in hydrogen.—The rusting of iron: W. A. Tilden. It was shown that (1) oxygen or air with liquid water are alone necessary to produce rusting of iron; (2) that water alone attacks iron slowly, producing a film of what is probably ferrous hydroxide; (3) that iron rust always contains ferrous oxide; and (4) that rusting is due in the first instance to electrolytic action, promoted in all ordinary cases by the existence of carbonic acid in water exposed to the air, and by the presence in iron of various compounds of carbon, silicon, phosphorus, and sulphur.—Studies on zirconium: E. Wedekind and S. J. Lewis.—The constituents of Canadian hemp, part i., apocynin: H. Finmore. The principal constituent of the root of *Apocynum cannabinum* is identical with the crystalline apocynin of commerce, which is identical with the acetovanillone obtained by Tiemann from *isoeugenol*, and

has the constitution $\text{HO} \begin{array}{c} \diagup \\ \text{M} \cdot \text{O} \\ \diagdown \end{array} \text{CO} \cdot \text{CH}_3$.—A new synthesis of apocynin: H. Finmore. The author has synthesised this substance from vanillin by an application of the Grignard process.—The constitution of diazonium perbromides: F. D. Chattaway.—Cholestenone: C. Dorée and J. A. Gardner. Cholestenone produced by the oxidation of cholesterol reacts with ozone, giving an ozonide which probably has the formula $\text{C}_{27}\text{H}_{44}\text{O}_3$. This, when decomposed by water, gives carbon dioxide and a ketomonocarboxylic acid, $\text{C}_{26}\text{H}_{42}\text{O}_3$, identical with that obtained by Windaus. Cholesterol on similar treatment gives an ozonide, $\text{C}_{27}\text{H}_{44}\text{O}_3$, which also evolves carbon dioxide on treatment with water.—Solubility of silver chloride in mercuric nitrate solution: B. H. Buttie and J. T. Hewitt. Morse's view that when mercuric nitrate is present in large excess, chlorine occurs only as HgCl_2 , is confirmed.—The relation between absorption spectra and chemical constitution, part ix., the nitroso- and nitro-

groups: E. C. C. **Baly** and C. H. **Desch**.—Benzeneazo-2-pyridone: W. H. **Mills** and Miss S. T. **Widdows**.—The electrolytic chlorination of the salts of some organic acids: J. K. H. **Inglis** and F. **Wootton**.—The action of nitrous gases on dicyclopentadiene: A. **Rule**. The gaseous products from the action of nitric acid on arsenious oxide bring about the formation of a mixture which on separation by means of alcohol was found to consist of the ψ -nitrosite and the dinitro derivative of the hydrocarbon.—An alternative structure for the supposed stereoisomeric α -osazones: F. D. **Chattaway**.—The formation of 4-pyrone compounds from acetylenic acids, part ii.: S. **Ruhemann**.—The fluorescence of platinocyanides: L. A. **Levy**. Barium platinocyanide exists in two forms identical in crystalline form, but which exhibit a remarkable difference in physical properties. One variety is golden-yellow, and only very slightly fluorescent, the other being bright green and very fluorescent. The two forms have the same chemical composition, and are isomeric modifications. Similar phenomena are exhibited by the calcium salt, and to a certain extent by the cerium salt.—The preparation of disulphides, part ii., the action of alkalis on sodium alkyl thiosulphates: T. S. **Price** and D. F. **Twiss**. The interaction between alkalis and sodium ethyl and benzyl thiosulphates in aqueous solution has been studied. The chief organic product of the action in each case is the corresponding disulphide, the main step of the reaction being probably represented by the equation



—Note on the formation of lead ethoxide: F. M. **Perkin**. When thin sheets of lead are boiled in alcohol or suspended in the vapour of boiling alcohol no action takes place, but if they are suspended over absolute alcohol and ozone is bubbled through it, in a short time the surface of the lead becomes tarnished, and then assumes a brownish-yellow colour due to the formation of lead ethoxide, $Pb(OEt)_2$.—Some reactions of phenylhydrazine with metallic cyanides and other salts: R. de J. F. **Struthers**. Phenylhydrazine in alcoholic solution combines with cuprous cyanide in ammoniacal solution to form an insoluble compound, $2CuCN, 3C_6H_5, NH.NH_2$. Cobalt cyanide exerts a powerful catalytic action on phenylhydrazine, 0.03 gram to 0.04 gram sufficing to determine the decomposition of 5 c.c. or 6 c.c. of phenylhydrazine with almost explosive violence. Nickel cyanide has a similar but less powerful action.—The formation of polyiodides in nitrobenzene solution, part iii., the chemical dissociation of the polyiodides of the alkali metals and ammonium radicals: H. M. **Dawson**.—The hydrolysis of amygdalin by emulsin, part ii.: S. J. M. **Auld**. It is shown that amygdalin is derived from an $\alpha\beta$ -disaccharide, the β -dextrose residue being attached to the benzaldecyanohydrin nucleus. Mandelonitrile glucoside is formed as an intermediate product during the hydrolysis of amygdalin by emulsin, the biose ether-linking breaking preferentially.—A new form of potash bulb: A. E. **Hill**. This is figured in the Proc. Chem. Soc., xxiv., 182.

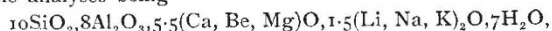
EDINBURGH.

Royal Society, June 15.—Dr. R. H. Traquair, vice-president, in the chair.—The reducing action of electrolytic hydrogen on arsenious and arsenic acids when liberated from the surface of different metals: W. **Thomson**. The hydrogen liberated from the five metals lead, zinc, cadmium, tin, and silver converted arsenious acid ions into arseniuretted hydrogen with about equal velocity. The reaction could be measured during small intervals of time, and the velocity of reaction was practically that of a unimolecular reaction. Arsenic acid was much more difficult to reduce than arsenious acid. Lead, however, converted it into arseniuretted hydrogen with a velocity nearly equal to that with which it reduced arsenious acid. Zinc, with a higher super-tension equivalent, reduced it at only about a third of the velocity, whilst silver reduced none at all under the conditions of the experiment.—The theory of the microbarograph, and on some observations with the Dines-Shaw instrument: Prof. **Chrystal**. The mathematical theory, which was an application of the laws of viscosity of gases, showed that with external pressure increasing at a steady gradient the microbarograph tended to a maxi-

imum, that a wave-like variation of pressure was recorded on the instrument with the crests and troughs preceding in time the corresponding rounded crests and troughs in the external variation, but that with a sharp, abrupt change in the rate of change of the pressure the corresponding pinnacles and troughs on the instrumental record occurred simultaneously with the external changes. Observations had been made at three stations in the neighbourhood of Lochs Tay and Lochearnhead with the object of measuring the rate of progression of rapid oscillations of pressure across the district. It was found that the majority of these were from the west, in this respect resembling cyclonic depressions, and that their speeds of progression also varied within much the same limits which characterised the progression of cyclones.—The effects of chloroform on the metabolism: Prof. Noel **Paton**. The object of the paper was to study the conditions under which late chloroform poisoning occurred. From a series of experiments on the administration of chloroform to dogs by the respiratory passages, by the stomach, and under the skin, the conclusions were drawn that when given by the mouth and hypodermically chloroform acted as a poison, decreasing the activity of the liver, but that when administered through the respiratory passages it increased the disintegration of the protein in the body and stimulated the liver. The reason of this was demonstrated in a second paper, by Miss Dorothy **Lindsay** and Prof. **Paton**, in which it was shown that chloroform given by the lungs was rapidly taken up and rapidly eliminated, but when administered by the other methods it was slowly taken up and slowly eliminated, and got fixed to the liver in large quantities.—Asteroidea, Ophiuroidea, and Echinoidea of the Scottish National Antarctic Expedition: Prof. **Koehler**. Of the ninety-four species collected, seventy-six were records from Antarctic and sub-Antarctic regions, including forty-one new species and two new genera.—Holothuroidea of the Scottish National Antarctic Expedition: Dr. **Clement Vaney**. Of the thirty-four species described twenty-one were new. Nearly all the new species are from very high southern latitudes, and from depths of 1400 to 2600 fathoms. Both these papers were communicated by Dr. W. S. Bruce.

PARIS.

Academy of Sciences, June 29.—M. Bouchard in the chair.—Observation of the partial eclipse of the sun of June 28, 1908, at the Observatory of Paris by various observers: B. **Baillaud**. Observations were made of the contacts and length of the common chord of the two discs, and numerous photographs were taken. The observers were MM. Bigourdan, Schaumasse, Chatelu, Popoff, Puisseux, and Baillaud.—Decomposition of the alcohols under the catalytic influence of wood charcoal (braise de boulanger): Georges **Lemoine**. Details are given of the products obtained by the catalytic decomposition of methyl, ethyl, normal propyl, isopropyl, and isobutyl alcohols in presence of charcoal. The results varied somewhat with the nature of the charcoal employed, but the main reaction was the production of hydrogen and the aldehyde, differing from the reaction with purified animal charcoal, the latter giving chiefly water and the corresponding olefine. The temperatures at which the decompositions took place were considerably lower than those at which the alcohol was decomposed in the absence of charcoal.—A new mineral species and the minerals which accompany it in the tourmaline layers of Madagascar: A. **Lacroix**. The new mineral is a silicate of aluminium, calcium, beryllium, magnesium, lithium, sodium, and potassium, the formula proposed from the analyses being



and for which the name bityite is proposed.—A new rheograph designed for the projection of the curves of alternating currents: Henri **Abraham** and J. **Carpentier**. The instrument is on the lines of one described in 1897, and is distinguished by the fact that its moving parts are relatively heavy, and capable of carrying a mirror of large surface. A demonstration of the apparatus was given before the academy.—Electrocapillary measurements by the method of large drops: M. **Gouy**. The capillary electrometer giving only relative figures, the present paper is concerned with absolute measurements. The drop of

mercury must be rigorously hemispherical, and this was secured by carrying it in a glass vessel, optically worked, of 40 mm. radius. Results are given for solutions of sulphuric acid, sodium sulphate, hydrochloric acid, and the iodide and bromide of potassium.—The action of metallic oxides on the primary alcohols: Paul **Sabatier** and A. **Mailhe**. The oxides examined fall into four groups:—(1) not undergoing reduction, and exerting no appreciable effect on the primary alcohols under 400° C.; (2) those rapidly reduced by the alcohol to the metal or lower oxide; (3) those which are not reduced, but decompose the alcohol catalytically into aldehyde and hydrogen, or ethylene hydrocarbon and water; (4) oxides slowly reduced, exerting a catalytic action. The detailed results will be given in a later paper.—Observations on the sun made at the Observatory of Lyons during the first quarter of 1908: J. **Guillaume**. Observations were made on forty-one days, and the results are given in three tables showing the number of spots, their distribution in latitude, and the distribution of the faculæ in latitude.—Ruled surfaces: A. **Demoulin**.—The canonical products of infinite genus: Arnaud **Denjoy**.—The partial differential equation of vibrating membranes: M. **Sanielevici**.—The existence of spark lines (enhanced lines) in flames at various temperatures, and on the modifications which they undergo: G. A. **Hemsalech** and C. **de Watteville**. The intensity of numerous iron lines has been studied by the authors' method in flames of different temperatures (air-coal gas, oxygen-coal gas, and oxygen-hydrogen), and it is found that the spark lines are most marked in the coolest flame, air-coal gas, and hence it is concluded that the action of the temperature cannot be considered as the fundamental factor in the production of the enhanced lines.—The preparation of the alkaline chloroiridites: M. **Vèzes**. A claim for priority against M. Marcel Delépine.—The molecular weights of the phosphoric acids determined by cryoscopy: H. **Giran**. The molecular weights found in acetic acid solution fall with the age of the solution; the true molecular weight for each acid at the moment of solution is deduced from a time curve. The formula deduced from these experiments for metaphosphoric acid is $5(\text{HPO}_3)_n$, for pyrophosphoric acid $3(\text{H}_2\text{P}_2\text{O}_7)_n$, and for orthophosphoric acid $2(\text{H}_3\text{PO}_4)_n$.—The magnetic oxides of chromium: Ivan **Shukoff**. From the magnetic properties of the mixture of oxides obtained by gently heating chromic anhydride, there would appear to be a magnetic oxide of chromium of the composition Cr_4O_9 .—The tellurides of arsenic and bismuth. The cryoscopic constant of tellurium: H. **Pélabon**.—The mechanism of the synthesis of the cyclic nitrogen compounds: L. J. **Simon**.—The method of Messinger and Vortmann for the estimation of some phenols. The separation of salicylic acid: J. **Bougault**. By the action of iodine and an alkali upon salicylic acid, a red, insoluble substance is produced, which can be used for the quantitative determination of salicylic acid.—Three new primary alcohols resulting from the condensation of sodium benzylate with propyl, butyl, and isoamyl alcohols: Marcel **Guerbet**.—Researches on bis-azoic compounds: H. **Duval**.—The products of condensation of ortho- and para-nitrobenzyl chloride with acetylacetone: M. **Mech**.—The origin of the colouring matter of red grapes and other vegetable organs: J. **Laborde**.—The oxidation of eugenol by the oxidising ferment of fungi and by perchloride of iron; the preparation of dehydroeugenol: H. **Cousin** and H. **Hérissey**. Oxidation of eugenol both by ferric chloride and by the biochemical method gives a new phenol, dehydrodieugenol, the acetic and benzoic esters of which are described.—The influence of certain combinations of iron compared with the peroxydases in the catalysis of hydriodic acid by hydrogen peroxide: J. **Wolff** and E. **de Stœcklin**.—The influence of the temperature of sterilisation of must and that of fermentation on the bouquet of wines: A. **Rosenstiehl**. Both the temperature of sterilisation and of fermentation of must can be lowered with advantage to the quality of the wine produced.—The comparative development of tubercles and roots: G. **André**.—The development of the notochord in the bony fishes: Louis **Roule**. From a study of the development of the notochord in the common perch (*Perca fluviatilis*), the author comes to the conclusion that there is not a complete homology between the notochord of Vertebrates and Tun-

cats.—Bulbar epistasy of nasal origin: Pierre **Bonnier**.—The geology of eastern Corsica: Pierre **Termier** and Eugène **Maury**.—The rameal origin of ulodendroid cicatrices of *Bothrodendron punctatum*: Armand **Renier**.—Report of the committee appointed to consider the distribution of the Bonaparte fund for 1908!

NEW SOUTH WALES.

Linnean Society, April 29.—Mr. A. H. S. Lucas, president, in the chair.—A revision of the Australian species of *Adelium* (Coleoptera): H. J. **Carter**. When Blessig reviewed the Australian Heteromera in 1862, fifteen species of *Adelium* were recognised. In the meantime, the number of described species has increased to eighty. The opportunity of comparing his collection with types in the British Museum and in the Paris and Brussels Museums during a recent visit to Europe had enabled the author to submit the species to a critical revision, the outcome of which is a proposed reduction of the number to fifty-four, by the reference of ten species to other genera, and the omission of synonyms. It is also noted that the so-called species of *Adelium* of New Zealand and New Caledonia belong to different genera, so that it is probable that the genus *Adelium* is confined to Australia and Tasmania.—A revision of the Thynnidae (Hymenoptera) of Australia, part ii.: R. E. **Turner**. Part ii. of the revision deals with the genus *Thynnus*. The species are very diverse in appearance and structure, but it is thought to be best, in the present state of knowledge, to group them in subgenera rather than to propose an excessive number of new genera, some of which might have to be sunk when additional material is available. The Australian species number 213, and fall into ten subgenera.

CONTENTS.

	PAGE
African Nature Notes. By Sir H. H. Johnston,	
G. C. M. G., K. C. B.	217
Water Power	218
The Discovery of the Weight of the Air. By	
W. A. D.	219
Our Book Shelf:—	
Stevens: "Plant Anatomy from the Standpoint of the Development and Functions of the Tissues, and Handbook of Micro-technic"	219
Sheringham: "Elements of Angling. A Book for Beginners."—L. W. B.	220
Williams and Fisher: "Elements of the Theory and Practice of Cookery"	220
Letters to the Editor:—	
Spectrum of the Radium Emanation.—Prof. E. Rutherford, F. R. S., and T. Royds	220
The Recent Nocturnal Glows.—Prof. Bohuslav Brauner	221
A Long-lived Solar Halo.—Catharine O. Stevens	221
Genial June.—W. F. Denning	221
The Darwin-Wallace Jubilee Celebration at the Linnean Society. (Illustrated.) By A. D.	221
The Daylight Saving Bill	223
Women and the Fellowship of the Chemical Society	226
Notes	228
Our Astronomical Column:—	
Radial Velocities of Ninety-nine Stars	232
The Observation of Coloured Stars	232
Photometric Observations of Eros	232
The Photography of Very Faint Spectra	232
July and August Meteors. By W. F. Denning	232
Magnetic Resolution of Spectral Lines	233
Social Anthropology	233
Recent Researches in the Structure of the Universe. II. (Illustrated.) By Prof. J. C. Kapteyn	234
University and Educational Intelligence	237
Societies and Academies	238