

radio-activity of coal. Fire-damp from Anzin has been previously shown by the authors to contain 0.04 per cent. of helium, and as the amount of crude gas evolved a day is estimated at 30,000 cubic metres, this corresponds to 12 cubic metres of helium a day. The amounts of radium and thorium in the ash of the coal have been determined, in this and other coals yielding fire-damp containing helium, and do not correspond to such large proportions of helium. The larger part of the gas is not derived from the radio-active material of the coal, and must be regarded as fossil helium.—**André Blondel**: The effect and production of the higher harmonics in the transport of electrical energy at high potentials.—**P. Sabatier** and **A. Mailhe**: The ester oxides of carvacrol. A study of the direct dehydration of carvacrol by the action of thorium oxide upon the vapour at temperatures between 400° and 500° C.—**M. Gambier**: Algebraic curves of constant torsion, real and not unicursal.—**F. Jager**: The application of the method of Fredholm to the tides of a basin limited by vertical walls.—**E. Mazurkiewicz** and **W. Sierpinski**: An ensemble superposable with each of its two parts.—**A. Pchéborski**: A generalisation of a problem of Tchébischeff and of Zolotareff.—**C. Gutton**: The specific inductive capacity of liquids. According to Voigt's hypothesis, the force which acts on an electron deviated from its equilibrium position in an electric field should not be exactly proportional to the deviation, and hence the specific inductive capacity ought to depend on the intensity of the field. In measurements made with toluene the deviations observed in the specific inductive capacity were of the same order as the experimental error. A slight diminution with increase of field was noticed with bromonaphthalene, 4.72 to 4.69.—**Maurice de Broglie**: The spectra of the Röntgen rays. Rays emitted by antikathodes of copper, iron and gold.—**J. de Kowalski**: An explosive luminous phenomenon in rarefied nitrogen. The author confirms the observations of Strutt that nitrogen free from the smallest trace of oxygen is transformed into active nitrogen in a discharge in electrodeless tubes. A curious explosive phenomenon is described which is attributed to a temporary combination between the active nitrogen and traces of mercury vapour unavoidably present to form mercury nitride, the latter decomposing spontaneously.—**H. Labrouste**: A molecular transformation of thin layers on water.—**F. Baud**, **F. Ducelliez**, and **L. Gay**: A calorimetric study of the system water-monomethylamine.—**H. Gault**: A new method of preparation of tricarballylic acid. Oxalocitric lactone cannot be distilled under reduced pressure without decomposition. The liquid obtained by distillation is not, as was supposed by Wislicenus and Beckh, the unchanged lactone, but proves to be ethyl $\alpha\alpha\beta\gamma$ -propane-tetracarboxylate. With dilute mineral acids a quantitative yield of crystalline tricarballylic acid is obtained.—**Enrique Hauser**: A new method for the detection and determination of gaseous hydrocarbons dissolved in mineral waters. After adding potash to the water it is shaken with air and the latter analysed.—**M. Piettre** and **A. Vila**: Observations on fibrinogen and the oxalated plasma.—**W. Kopaczewski**: The influence of acids on the activity of dialysed maltase. The observed effects cannot be explained exclusively by the concentration of the acid ions.—**Mlle. Jeanne Weill**: The amount of fatty acids and cholesterol in the tissues of cold-blooded animals.—**Paul Fallot**: The tectonic of the sierra of Majorca.—**Emile Belot**: An attempt at a physical theory of the formation of the oceans and primitive continents.—**F. Malméjac**: The importance of the estimation of chlorides for the control and evaluation of drinking water.—**A. Boutaric**: The thermal state of the atmosphere.

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BOOKS RECEIVED.

- Om Forandringer i Ringkobing Fjords Fauna. By A. C. Johansen. Pp. 144. (Kobenhavn: Bianco Lunos Bogtrykkeri.)
- Wissenschaftliche Ergebnisse der Deutschen Zentral-Afrika-Expedition, 1907-8. Band v. Zoologie iii. Lief. 1. Orthoptera. By J. A. G. Rehn. Pp. 223. (Leipzig: Klinkhardt und Biermann.) 8.40 marks.
- Albin Haller. Biographie, Bibliographie Analytique des Écrits. By E. Lebon. Pp. 120. (Paris: Gauthier-Villars; Masson et Cie.) 7 francs
- Cours de Physique. By Prof. E. Rothe. Première Partie. Généralités—Unités—Similitude—Mesures. Pp. vi+183. (Paris: Gauthier-Villars.) 6.50 francs.
- Theorie Mathématique de l'Echelle Musicale. By A. Vaucher. Pp. 68. (Paris: Gauthier-Villars.) 2.25 Francs.
- The Fleet Annual and Naval Year Book, 1914. Compiled by L. Yexley. Pp. 135. (London: The Fleet, Ltd.) 1s. net.
- Progress of Education in India, 1907-12. By H. Sharp. Vol. i. Pp. xvii+284+xxxii. (Calcutta: Superintendent Government Printing, India.) 6s.
- The Pigments and Mediums of the Old Masters. By Prof. A. P. Laurie. Pp. xiv+192+xxxiv plates. (London: Macmillan and Co., Ltd.) 8s. 6d. net.
- Intermetallic Compounds. By Dr. C. H. Desch. Pp. vi+116. (London: Longmans and Co.) 3s. net.
- Die Theorie der Strahlung und der Quanten. Edited by A. Eucken. Pp. xii+405. (Halle a. S.: W. Knapp.) 15.60 marks.
- Industrial Chemistry for Engineering Students. By Prof. H. K. Benson. Pp. xiv+431. (London: Macmillan and Co., Ltd.) 8s. net.
- The Mineral Resources of the Philippine Islands for the Year 1912. Pp. 76+vii plates. (Manila: Bureau of Science.)
- Careers for University Men. By H. A. Roberts. Pp. 22. (Cambridge: Bowes and Bowes; London: Macmillan and Co., Ltd.) 6d. net.
- The Principles of War Historically Illustrated. By Major-General E. A. Altham. Vol. i. Pp. xv+436, and 5 maps to illustrate the volume. (London: Macmillan and Co., Ltd.) 10s. 6d. net.
- Anthropology as a Practical Science. By Sir R. C. Temple. Pp. 96. (London: G. Bell and Sons, Ltd.) 1s. net.
- Die Stoffwanderung in ablehenden Blättern. By Dr. N. Swart. Pp. 118+v plates. (Jena: G. Fischer.) 6 marks.
- Kristallberechnung und Kristallzeichnung. By Dr. B. Gossner. Pp. vi+128 (Leipzig und Berlin: W. Engelmann.) 8 marks.
- Muscular Work. By F. G. Benedict and E. P. Cathcart. Pp. vi+176. (Washington: Carnegie Institution.)
- Piebald Rats and Selection. By W. E. Castle and J. C. Phillips. Pp. 54+3 plates. (Washington: Carnegie Institution.)
- Carnegie Institution of Washington. Year Book. No. 12, 1913. Pp. xvi+336. (Washington: Carnegie Institution.)

DIARY OF SOCIETIES.

THURSDAY, MARCH 12.

ROYAL SOCIETY, at 4.30.—Note on a Functional Equation Employed by Sir George Stokes: Sir James Stirling.—The Mercury Green Line $\lambda=5461$ as Resolved by Glass and Quartz Lummer Plates and on its Zeeman Components: Prof. J. C. McLellan and A. R. McLeod.—The Electrical Condition of a Gold Surface During the Absorption of Gases and their Catalytic Combustion: H. Hartley.—The Diffusion of Electrons through a Slit: J. H. Mackie.—The Rate of Solution of Hydrogen by Palladium: Dr. A. Holt.—The Dispersion of a Light Pulse by a Prism: Dr. R. A. Houston.