

number of points of ramification.—**Louis Roy**: Quasi-waves in three dimensions.—**L. Dunoyer** and **R. W. Wood**: Correction to our note entitled photometry of the superficial resonance of sodium vapour under the stimulation of the D lines. A correction of an error of calculation in the determination of the width of the resonance lines.—**F. Charron**: A hydrodynamical arrangement for the magnification and registration of radio-telegraphic signals. The telephonic receiver is modified so that the vibrations are concentrated on the orifice of a vertical capillary tube. A stream of gas is flowing out of the capillary tube with a velocity just below that of turbulent flow. Sounds in the telephone produce disturbances in the flow of the gas through the jet, and these can be utilised to form a record without using a Morse receiver.—**H. Bourget**, **H. Buisson**, and **Ch. Fabry**: Interferential measurements of the radial velocities and wave-lengths in the nebula of Orion. The mean radial velocity of the nebula is +15.8 kilometres a second with respect to the sun, that is, the distance between the sun and the nebula is increasing at that rate. The wave-lengths of the characteristic double ultra-violet line had been determined and found to be 3726.100 and 3728.838. These lines are not emitted by any known element.—**B. Fessenkoff**: The law of reflection of light by matt surfaces.—**J. Minguin** and **R. Bloc**: The influence of solvents on the optical activity of the camphoric esters. The optical activity of the *allo*-acids is the same in alcoholic, benzene, or toluene solutions: the *ortho*-acids give higher rotations in benzene or toluene than in alcohol.—**Marcel Delépine**: Lithium chloro-iridate and chloro-iridite.—**Jacques Bardet**: The extraction of germanium from Vichy water. Germanium had been previously detected spectroscopically in Vichy water, and an attempt was made to isolate germanium compounds from this source. The starting point was the mixture of insoluble carbonates deposited on heating the water, and 0.06 gram of germanium oxide was prepared from 100 kilograms of deposit, representing about 250,000 litres of mineral water. The method of separation is given in detail.—**M. Vasticar**: The apparatus of support of the internal acoustic region.—**Michel Cohendy** and **Eugène Wollman**: Experiments on life without micro-organisms. Aseptic growth of guinea-pigs. These experiments prove that it is possible to raise guinea-pigs under strictly aseptic conditions, development and utilisation of food being in no way prejudiced by the absence of micro-organisms.—**Louis Cruveilhier**: Treatment of blennorrhagia by the method of sensitised virus vaccines.—**Auguste Lumière** and **Jean Chevrolier**: Some new considerations concerning the culture of gonococci.—**P. Macquaire**: The amylolytic diastase of the pancreas.—**L. Cayeux**: Eastern prolongation of the ferruginous formation of the May (Calvados) synclinal.

## CAPE TOWN.

**Royal Society of South Africa**, April 15.—**Mr. S. S. Hough** in the chair.—**T. Muir**: (1) Note on a theorem of Ph. Gilbert, regarding the differentiation of a special Jacobian. (2) Note on Rosanes's functions, resembling Jacobians.—**R. T. A. Innes**: The triple stellar system  $\zeta$  Virginis and  $\Sigma$  1757. These two stars, although a considerable distance apart, constitute a system as they are moving through space with almost identical velocities and directions.—**G. A. H. Bedford**: A curious mosquito.—**A. L. du Toit**: The porosity of the rocks of the Karroo system. Determinations are given of the porosity of more than ninety rocks, the majority being from borehole cores. It was found with the three-fold division of the Beaufort beds the mean porosity of the Sandstone was 2.9 per cent. for the lower, 5.2 per cent. for the middle,

and 5.5 per cent. for the upper division. The figures for the Transvaal phase of the Karroo were much higher. The effects of weathering in increasing the porosity are discussed and analysed.—**J. R. Sutton**: A note on the temperatures of the air observed at Mochudi. The note gives a brief account of some points of interest in the results of temperature observations by Harbor at Mochudi in the Bechuanaland Protectorate. The extremes of temperature are considerable, the greatest range so far observed being from 108° F. to 28° F. The mean maximum temperatures depend upon the sun's meridian altitude in much the same way as they do at Kimberley. The annual cold wave of the middle of July is felt at Mochudi like it is elsewhere further south.

## BOOKS RECEIVED.

- The Simpler Natural Bases. By Prof. G. Barger. Pp. viii+215. (London: Longmans and Co.) 6s. net.
- Department of Marine and Fisheries. Report of the Meteorological Service of Canada, Central Office, Toronto, for the Year ended December 31, 1910. Vol. i. Introduction and Parts i.-iii. Pp. xxiii+341. Vol. ii. Parts iv.-vi. and Appendix. Pp. 342-604. (Ottawa: C. H. Parmelee.)
- The Therapeutic Value of the Potato. By H. C. Howard. Pp. 31. (London: Baillière and Co.) 1s. net.
- Ernährungsphysiologisches Praktikum der höheren Pflanzen. By Prof. V. Grafe. Pp. x+494. (Berlin: P. Parey.) 17 marks.
- American Mathematical Society. Colloquium Lectures. Vol. iv. The Madison Colloquium, 1913. i., On Invariants and the Theory of Numbers. By L. E. Dickson. ii., Topics in the Theory of Functions of Several Complex Variables. By W. F. Osgood. Pp. vi+230. (New York: American Mathematical Society.)
- Smithsonian Institution. Bureau of American Ethnology. Bulletin 56. Ethnology of the Tewa Indians. By J. Henderson and J. P. Harrington. Pp. x+76. (Washington: Government Printing Office.)
- Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere. Edited by Prof. A. Oettel. Achter Teil. Pp. x+168. (Jena: G. Fischer.) 8 marks.
- The British Academy. Palissy, Bacon, and the Revival of Natural Science. By Sir T. Clifford Allbutt. Pp. 15. (London: Oxford University Press.) 1s. net.
- Bulletin of the Illinois State Laboratory of Natural History, Urbana, Ill., U.S.A. Vol. x., Article 3: Studies on the Enchytræideæ of North America. By Dr. P. S. Welch. Pp. 212+Plates viii-xii. (Urbana, Ill.)
- British Museum (Natural History). A Monograph of the Genus Sabicea. By H. F. Wernham. Pp. v+82+xii Plates. (London: British Museum.) 6s.
- A Revision of the Ichneumonidæ. Based on the Collection in the British Museum (Natural History). Part iii. By C. Morley. Pp. xi+148. (London: British Museum.) 5s. 6d.
- British Museum (Natural History). Report on Cetacea stranded on the British Coasts during 1913. By Dr. S. F. Harmer. Pp. 12. (London: British Museum.) 1s. 6d.
- Elements of Algebra. By G. St. L. Carson and Prof. D. E. Smith. Part i. Pp. v+346. (London: Ginn and Co.) 3s.
- Journal of the British Fire Prevention Committee. No. ix. (Special subject.) Table G. The Fire Resistance of Partitions. Pp. 8+1 Table. (London: The British Fire Prevention Committee.) 10s. 6d.

Annuaire Général de Madagascar et Dépendances, 1914. Pp. x+745. (Tananarive.)

X-Rays: an Introduction to the Study of Röntgen Rays. By Dr. G. W. C. Kaye. Pp. x+252. (London: Longmans and Co.) 5s. net.

I Minerali. By Prof. E. Artini. Pp. xv+422+40 Plates. (Milano: U. Hoepli.) 9.50 lire.

Beiträge zur Kenntnis der Land- und Süßwasserfauna Deutsch-Südwestafrikas. Edited by W. Michaelsen. Lief. i. Pp. 182+4 Plates. (Hamburg: L. Friederichsen and Co.) 12 marks.

Beiträge zur Kenntnis der Meeresfauna Westafrikas. Edited by W. Michaelsen. Lief. i. Pp. 84+2 Plates. (Hamburg: L. Friederichsen and Co.) 6 marks.

Lectures Introductory to the Theory of Functions of Two Complex Variables. By Prof. A. R. Forsyth. Pp. xvi+281. (Cambridge: University Press.) 10s. net.

Kinetische Stereochemie der Kohlenstoffverbindungen. By Dr. A. von Weinberg. Pp. viii+107. (Braunschweig: F. Vieweg und Sohn.) 3 marks.

Canada. Department of Mines. Memoir No. 18 E. Bathurst District, New Brunswick. By G. A. Young. Pp. 96+9+Maps. Memoir No. 26. Geology and Mineral Deposits of the Tulaween District, B.C. By C. Camsell. Pp. vii+188+10+maps. (Ottawa.)

Photography in Colours. By Dr. G. L. Johnson. Second (Revised) Edition. Pp. xiv+243+13 Plates. (London: G. Routledge and Sons, Ltd.) 3s. 6d. net.

Common British Beetles. By Rev. C. A. Hall. Pp. viii+88+16 Plates. (London: A. and C. Black.) 1s. 6d. net.

## DIARY OF SOCIETIES.

### THURSDAY, MAY 14.

ROYAL SOCIETY, at 4.30.—The Various Inclinations of the Electrical Axis of the Human Heart. I. A.: The Normal Heart. Effects of Respiration: Dr. A. D. Waller.—Fossil Plants showing Structure from the Base of the Waverly Shale of Kentucky: Dr. D. H. Scott and Prof. E. C. Jeffrey.—The Controlling Influence of Carbon Dioxide in the Maturation, Dormancy, and Germination of Seeds. II.: F. Kidd.—The Cultivation of Human Tumour Tissue *in vitro*: D. Thomson and J. G. Thomson.—The Nutritive Conditions Detraining the Growth of Certain Freshwater and Soil Protista: H. G. Thornton and G. Smith.

ROYAL INSTITUTION, at 3.—The City of Laws: in General: and Biological Chemistry: Prof. Svante Arrhenius.

CONCRETE INSTITUTE, at 7.30.—Sand and Coarse Material and Proportioning Concrete: J. A. Davenport and Prof. S. W. Perrott.

SOCIETY OF DYERS AND COLURISTS, at 8.—Notes on the Chemistry of Starch and its Transformations: W. A. Davis.—The Analysis of Malt Extracts: W. P. Dreaper.—Temperature and Concentration as Affecting Hydration and Soda Absorption during the Process of Formation of Cellulose Monois: Clayton Beadle and H. P. Stevens.

### FRIDAY, MAY 15.

ROYAL INSTITUTION, at 9.—Plant Animals: A Study in Symbiosis: Prof. F. Keeble.

### SATURDAY, MAY 16.

ROYAL INSTITUTION, at 3.—Bird Migration: Prof. C. J. Patten.

### MONDAY, MAY 18.

ROYAL GEOGRAPHICAL SOCIETY, at 3.—Anniversary Meeting.

JUNIOR INSTITUTION OF ENGINEERS, at 8.—Static Transformers, the Design and Application: F. R. Peters.

VICTORIA INSTITUTE, at 4.30.—The Composite of Races and Religions in America: Rev. Dr. S. B. McCormick.

### TUESDAY, MAY 19.

ROYAL INSTITUTION, at 3.—Natural History in the Classics. I.: The Natural History of the Poets, Homer, Virgil, and Aristophanes: Prof. D'Arcy W. Thompson, C.B.

ROYAL STATISTICAL SOCIETY, at 5.—Suggestions for Recording the Life History and Family Connections of Every Individual: W. Hazell.

ZOOLOGICAL SOCIETY, at 8.30.—Notes on the Circulatory System of Elasmobranchs. I.: The Venous System of the Dogfish (*Scyllium canicula*): Dr. C. H. O'Donoghue.—Scent-organs in Trichoptera: B. F. Cummings.—Notes on Plumage Development in the African Wood-stork: G. Jenkinson.—A New Cestode from an Albatross (*Diomedea irrorata*): H. A. Bawlis.—The Deinocephalia, an Order of Mammal-like Reptiles: D. M. S. Watson.—The Species of the Genus *Paralastor*, Sauss., and some other Hymenoptera of the Family Eumenidae: Dr. R. C. L. Perkins.

ROYAL SOCIETY OF ARTS, at 4.30.—The Singing of Songs: Old and New. II.: Classical Songs: H. Plunkett Green.

### WEDNESDAY, MAY 20.

AERONAUTICAL SOCIETY, at 8.30.—Wilbur Wright Memorial Lecture: Dr. R. T. Glazebrook.

ROYAL METEOROLOGICAL SOCIETY, at 4.30.—The Reduction of Barometer Readings in Absolute Units, and a New Form of Barometer Card: E. Gold.—A Cuban Rain Record and its Application: A. Hampton Brown.

ROYAL SOCIETY OF ARTS, at 8.30.—The Channel Tunnel and its Early History: J. C. Hawkshaw.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Exhibition of Microscopic Aquatic Life.

### THURSDAY, MAY 21.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Effect of the Magneton in the Scattering of  $\alpha$  Rays: Prof. W. M. Hicks.—Luminous Vapours Distilled from the Arc, with Applications to the Study of Spectrum Series and their Origin. I.: Hon. R. J. Strutt.—The Ionisation of Gases by Collision and the Ionising Potential for Positive Ions and Negative Corpuscles: W. T. Pawlow.—The Determination of Elastic Limits under Alternating Stress Conditions: C. E. Stromeyer.—The Emission of Electricity from Various Substances at High Temperatures: G. W. C. Kaye and W. F. Higgins.

ROYAL INSTITUTION, at 3.—Identity of Laws: in General: and Biological Chemistry: Prof. Svante Arrhenius.

ROYAL GEOGRAPHICAL SOCIETY, at 5.—The Gulf Stream: Commander Campbell Hepworth.

INSTITUTION OF MINING AND METALLURGY, at 8.

ROYAL SOCIETY OF ARTS, at 4.30.—The Indian Census of 1911: Ethnography and Occupations: E. A. Gait.

### FRIDAY, MAY 22.

ROYAL INSTITUTION, at 9.—The Mortuary Chapels of the Theban Nobles: R. Mond.

PHYSICAL SOCIETY, at 5.—Volatility of Thorium Active Deposit: T. Barratt and A. B. Wood.—The Passage of  $\alpha$ -Particles through Photographic Films: H. P. Walmsley and Dr. W. Makower.—A Null Method of Testing Vibration Galvanometers: S. Butterworth.—Experiments with an Incandescent Lamp: C. W. S. Crawley and S. W. J. Smith.

### SATURDAY, MAY 23.

ROYAL INSTITUTION, at 3.—Fiords and their Origin. I.: The Nature and Distribution of Fiords: Prof. J. W. Gregory.

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