that the subject of seasonal dimorphism, which had been first investigated systematically by Weismann, was receiving so much attention in this country. He was of opinion that the results hitherto arrived at were quite in harmony with Weismann's theory of reversion to the glacial form, and all the evidence recently accumulated by the excellent observations of Mr. Merrifield and others went to confirm this view as opposed to that of the direct action of temperature as a modifying influence.

Mathematical Society, March 14.—Major P. A. MacMahon, R.A., F.R.S., President, in the chair.—The President announced that he had written letters of condolence to Lady Cockle and Mrs. Cayley, and had received their acknowledgments of receipt of the same, which he communicated to the meeting.—Prof. Hill, F.R.S., communicated a paper, by Mr. F. H. Jackson, entitled "Certain Π Functions," and the President (Mr. A. B. Kempe, F.R.S., in the chair) read a paper on the perpetuant invariants of binary quantics.—Lieut.-Col. Allan Cunningham, R.E., gave a proof that $2^{197}-1$ is divisible by 7487.—The President read a letter from the Rev. T. C. Simmons, announcing what the writer believed to be a "new theorem in Probability."

PARIS.

Academy of Sciences, March 25.—M. Marey in the chair.—On the theory of surfaces and of algebraical groups, by M. Émile Picard.—New researches by Prof. Ramsay on argon and on Helium, communicated by M. Berthelot. A letter from Prof. Ramsay was read describing the spectrum of argon obtained from clèveite and the discovery of Helium.—Remarks on the spectra of argon and of the aurora borealis, by M. Berthelot. During the author's recent experiments on the condensation of argon with benzene vapour under the influence of the silent discharge, a magnificent greenish-yellow fluorescence was observed. Its spectrum consisted of a series of lines and remarkable bands. So far as the experimental conditions allowed of comparison, this spectrum recalled that of the aurora borealis. It is suggested that this phenomenon may possibly be due to the formation of some fluorescent combination of argon in the upper regions of the atmosphere under electrical influence.—Researches on the metals of Cerite, by M. P. Schützenberger. The preparation of cerium sulphate in a state of such purity as to admit of accurate determinations of the atomic weight of cerium is described. The value 139·45 is obtained for this constant by a special process of estimating the sulphuric acid in this sulphate. It is shown that other methods of obtaining the atomic weight give unreliable results. Taking various fractions of the sulphate on recrystallisation, the later fractions give a much less value for the atomic weight of cerium than the earlier ones.—Observations of Charlois' planet BU, made at Toulouse observatory, by MM. B. Baillaud and Rossard.—Observations of Wolf's planet BT (March 16, 1895), made at Besançon observatory, by M. H. Petit.—A general property of axoids, by M. A. Mannheim.—On lines of curvature, by M. Thomas Craig.—On the theory of equations to the derived partials, by M. Wladimir de Tannenberg.—On linear equations to the derived partials, by M. Emile Borel.—On the movement of projectiles in the air, by M. Chapel. A series of four equations are given which supply a complete solution to the ballistic problem for speeds ranging between 300 m. and 1100 m.—On the extension to magnesia of a method of synthesising fluorides and silicates, by M. A. Dubois. The compounds $MgF_2.KF$, $MgF2.2KF$, and $MgO.K_2O.3SiO_2$ are described and their optical and chemical properties given.—On a new method for the preparation of chloroplatinous acid and its salts, by M. Léon Pigeon. Reduction of chloroplatinic acid in accordance with the equation,

$$BaPtCl_6 + BaS_2O_6 + 2H_2O = H_2PtCl_4 + 2HCl + 2BaSO_4,$$

is employed. Following the method given in detail, the yield is almost theoretical.—Heat of formation of calcium acetylide, by M. de Forcrand. The heat of formation of solid C_2Ca from diamond and solid Ca is −7·25 Cal., substituting amorphous carbon it is −0·65 Cal., for gaseous carbon it is +76·95 Cal.—Action of ortho-amidobenzoic acid on benzoquinone, by MM. J. Ville and Ch. Astre.—Alterations in saccharine matters during the germination of barley, by M. P. Petit. The conclusions are drawn: (1) There is a relation between the quantities of reducing sugars and of saccharose existing in barley during its germination. (2) The formation of saccharose commences even during the damping, whereas reducing sugars remain nearly constant during the same period. (3) The variation of reducing power represents the activity of respiration.—Chemical process for the purification of water, by MM. F. Bordas and Ch. Girard. Calcium permanganate is employed to oxidise the organic matters, and the excess of this salt is removed by treatment with lower oxides of manganese. The treatment recommended removes organic matter also by physically precipitating it from the water, which, after treatment, contains no micro-organisms, and very little calcium carbonate.—On the wheat produced on a saliferous soil in Algeria, by MM. Berthault and Crochetelle.—On the abnormal fronds of ferns, by M. Ernest Olivier.—Origin and division of granular nuclei in large sarcomatous cells, by MM. O Van der Stricht and P. Walton.—A note, by M. Delaurier, concerning an easy method of obtaining a perfect vacuum without mechanism, deals with the production of a vacuum by absorption, as with oxygen and iron at a red heat.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Birds, Beasts, and Fishes of the Norfolk Broadland: P. H. Emerson (Nutt).—Balistique des Nouvelles Poudres: E. Vallier (Paris, Gauthier-Villars).—La Théorie des Procédés Photographiques: A. de la Baume Pluvinel (Paris, Gauthier-Villars).—La Distillation: E. Sorel (Paris, Gauthier-Villars).—Dissections Illustrated: C. G Brodie, Part 4 (Whittaker).—Methodisches Lehrbuch der Elementar Mathematik: Dr. G. Holzmüller, Dritter Teil (Leipzig, Teubner).—A Primer of Evolution: E. Clodd (Longmans).—Geometrical Conics: F. S. Macaulay (Cambridge University Press).—Standard Dictionary, Vol. 2 (Funk and Wagnalls).—Outlines of Zoology: J. A. Thomson, 2nd edition (Pentland).—The Book of the Dead. The Papyrus of Ani in the British Museum: Dr. E. A. W. Budge (British Museum).

PAMPHLETS. Report of the Meteorological Council to the Royal Society for the Year ending March 31, 1894 (Eyre and Spottiswoode).—Stonyhurst College Observatory. Results of Meteorological and Magnetical Observations, 1894 Rev. W. Sidgreaves (Clitheroe).—18th Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois (Springfield, Ill.).

SERIALS.—Cassell's Magazine, April (Cassell).—Chambers's Journal, April (Chambers).—Century Magazine, April (Unwin).—Natural Science, April (Kait).—Zeitschrift für Wissenschaftliche Zoologie, lix. Band, 1 Heft (Leipzig, Engelmann).—Gazzetta Chimica Italiana, 1895, Fasc. 2 (Roma).—Humanitarian, April (Hutchinson).—Contemporary Review, April (Isbister).—National Review, April (Arnold).—Fortnightly Review, April (Chapman). Bulletin de la Académie Royale des Sciences, &c., de Belgique, tome 29, No. 2 (Bruxelles). Geographical Journal, April (Stanford).—Journal of the Royal Agricultural Society of England (third series), Vol. vi. Part 1 (Murray).

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