

presence of moisture, and are no doubt of voltaic origin. (8) Perfectly dry Se is below platinum in the thermo-electric series. Prof. Minchin (communicated) suggested that the selenium "cell" should be called a selenium "resistance." A grid having one terminal made of aluminium and the other of copper, might form a true cell, and might generate an E.M.F. when light fell on it. He (Prof. Minchin) would like to know if the author had tried any such cell in which light simply and solely generated an E.M.F. He could not agree that chemical action must necessarily follow the action of light in a cell. For, take the case of the oldest photo-electric cell—the thermopile—what chemical action can we show here for all the energy of the incident heat. Chemical action due to light may, or may not, occur according to the nature of the cell. Mr. Appleyard asked whether the author had submitted these selenium resistances to the action of electric oscillations. Prof. Minchin's "impulsion" cells were greatly influenced by electric oscillations. The great variation in the resistance with time of the author's cells pointed rather to an effect of contact between the selenium and the electrodes, than to an elementary change in the structure or composition. He (Mr. Appleyard) had recently tried to crystallise a supersaturated solution of sodium sulphate by electric oscillations, as well as by direct sparks, and by currents of several amperes, but no crystals could be induced to form. Change of contact, rather than change of structure, appeared to him to be the most promising direction in which to look for an adequate theory of selenium resistances. Prof. Ramsey said the quantity of Se liberated in the electrolytic experiment was much too great to be accounted for by oxygen dissolved in the water. The study of Se was very interesting, for this substance was on the borderland between those bodies in which the electric conduction was metallic, and those in which it was known to be electrolytic. The author, in his reply, said he agreed that the name "selenium cell" was not an appropriate one. He had not tried the effect of electric oscillations.—The Society then adjourned till the autumn.

PARIS.

Academy of Sciences, July 1.—M. Marey in the chair.—The President announced the decease of Prof. Huxley, Correspondant of the Anatomy and Zoology Section.—On photographs of the moon and new objects discovered by means of them, by M.M. Loewy and Puiseux.—On an extensive class of linear partial differential equations, of which all the integrals are analytical, by M. Emile Picard.—Laws of extinction of a simple wave on the high seas, by M. J. Boussinesq. The coefficient of extinction (with the distance) of a simple wave is inversely proportional to the fifth power of its demiperiod T .—On the estimation of minute quantities of arsenic, by M. Ad. Carnot. The arsenic is separated in the usual manner as sulphide, this is dissolved in free ammonia and treated with silver nitrate and hydrogen peroxide. The solution is then precipitated by bismuth nitrate, followed by ammonia, the accompanying bismuth hydrate is dissolved out by nitric acid ($\frac{1}{3}$ nitric acid of sp. gr. 1.33), and, finally, the bismuth arsenate is dried at 110° and weighed.—Truffles (Terfäs) from Morocco and Sardinia, by M. Ad. Chatin.—Comparison of the heating of the muscles in the cases of positive and negative work, by M. A. Chauveau. During negative work, descent or lowering, the temperature of the muscles concerned was raised to a notably less degree than during corresponding positive work, ascent or raising.—Contribution to the study of arable soil. Quantities of air and water contained in clods of earth, by M. P. P. Dehérain.—On the products of oxidation of benzylidenecamphor and benzylcamphor. Nitrosate or nitronitrite of benzylidenecamphor, by M. A. Haller.—A new instrument (tachéograph) serving to survey and trace directly from the earth's surface, by M. Schrader.—On curves traced on a surface, of which the osculating sphere is tangential at each point to the surface, by M. E. Cosserat.—On linear equations to the derived partials, by M. Étienne Delassus.—On the integration of ordinary differential equations, by M. Alf. Guldberg.—On the propagation of sound in a cylindrical tube, by M.M. J. Violle and Th. Vautier.—On the apparent attractions and repulsions of electrified conductors in a dielectric fluid, by M. Gouy. The apparent forces exercised between conductors with given charges in a liquid dielectric result: (1) from their mutual attractions and repulsions, the same as in a vacuum; (2) from the hydrostatic pressure produced by the force which attracts the dielectric in the sense where the intensity of the field increases most rapidly.—New method of measurement of electric capacities based on the sensitiveness of the skin,

by M. H. Bordier.—On the solubility of superfused liquids, by M. Louis Bruner. The author finds that superfused sodium thiosulphate is much more soluble in alcohol than the corresponding solid compound.—On the specific heat of superfused salts, by M. Louis Bruner. The curve of specific heats at different temperatures for sodium thiosulphate shows a maximum near the point of fusion, 48°C .—On paratungstic acid, by M. L. A. Hallepeau.—On the estimation of alumina in phosphates, by M. Henri Lasne. A method of precipitation of pure aluminium phosphate is described, which avoids the complications introduced by the use of molybdate or citrate in estimating alumina. The precipitation is accomplished by the use of ammonium thiosulphate.—On sodammonium, by M. de Forcrand. A thermo-chemical study.—On the phosphoric esters of allyl alcohol, allylphosphoric acid, by M. J. Cavalier.—Preparation and conductivity of new methyl alkylcyanacetates, by M. J. Guinchant.—Verification of Tschermak's law relative to plagioclases, and a new process of orientation and of diagnosis of feldspars in thin plates, by M. A. Michel-Lévy.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Matriculation Directory, No. xviii., June, 1895 (University Correspondence College).—Allen's Naturalist's Library. A Hand-book to the Game Birds, Vol. 1: W. R. Ogilvie-Grant (Allen).—Missouri Botanical Garden, Sixth Annual Report (St. Louis, Mo.).—Iowa Geological Survey, Vol. 3, 2nd Annual Report, 1893 (Des Moines).—An Analysis of Astronomical Motion: Dr. H. Pratt (Norman).—Report of the International Meteorological Congress held at Chicago, Ill., August 21-24, 1893, Part 2 (Washington).—Ice-Bound on Kolguev: A. Trevor-Battye (Constable).—Wild England of To-day: C. J. Cornish (Seeley).—Thirteenth Annual Report of the Fishery Board for Scotland. Part 1. General Report (Edinburgh).

PAMPHLETS.—Report on the Loss of Gold in the Reduction of Auriferous Veinstone in Victoria: H. Rosales (Melbourne).—Royal Gardens, Kew, Hand-list of Herbaceous Plants (Eyre).—Great Eastern Railway Company's Tourist Guide to the Continent (30 Fleet Street).

SERIALS.—Geological Magazine, July (Dulau).—Scribner's Magazine, July (Low).—Jahrbuch der K.K. Geologischen Reichsanstalt, Jahrgang 1894, xlv. Band, 2, 3, and 4 Heft (Wien).—L'Anthropologie, Tome vi. No. 3 (Paris).—Science Progress, July (Scientific Press, Ltd.).—Proceedings of the Bath Natural History and Antiquarian Field Club, Vol. 8, No. 2 (Bath).—Annals of Scottish Natural History, July (Edinburgh, Douglas).—Journal of the Sanitary Institute, July (Stanford).—Himmel und Erde, July (Berlin).—Blackwood's Magazine, July (Blackwood).—Transactions of the Leicester Literary and Philosophical Society, April (Leicester).—Mind, July (Williams).—Botanische Jahrbücher, Zwanzigster Band, 5 Heft (Leipzig).

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