Societies and Academies.

CAMBRIDGE.

Philosophical Society, July 16.—Mr. C. T. Heycock, president, in the chair.—W. M. H. **Greaves** : The possible mechanics of the hydrogen atom.—S. **Chapman** : The motion of a neutral ionised stream in the earth's magnetic field.—J. D. **Bernal** : Analytical theory of crystals.—H. F. **Baker** : Two geometrical notes : (1) Theory of confocal quadrics and Poncelet's porism of inscribed triangles. (2) A self reciprocal figure, and the associated cubic surfaces.—L. **Godeaux** : Sur la representation analytique des congruences de coniques.—C. T. **Preece** : Dougall's theorem on hypergeometric functions.—W. L. **Marr** : A quintic locus defined by five points in a plane.—J. **Brill** : On the problem of three bodies.—C. G. F. **James** : Extensions of a theorem of Segre's, with their natural position in space of seven dimensions.—T. M. **Cherry** : The form of the solution of the equations of dynamics.—R. A. **Fisher** : Note on Dr. Burnside's recent paper on errors of observation.—C. G. **Darwin** and R. H. **Fowler** : Further examples of partition functions.—H. W. **Richmond** : Real twisted cubics which are geodesics on quadric surfaces.

DUBLIN.

Royal Irish Academy, June 25.—Prof. Sydney Young, president, in the chair.—A. C. **O'Sullivan** : Corresponding points on the curve of intersection of two quadrics. Corresponding points on the curve of intersection of two quadrics u, v are defined as pairs of points the tangents at which to the curve are generators of the same species of the same quadric $\lambda u - v$. There are three kinds of correspondence, each related to one of the three ways in which the roots of the discriminant of $\lambda u - v$ may be grouped. If four points lie in a plane they, with their correspondents of the three kinds, lie in fours on 64 planes, 16 planes passing through each point. There exists a correspondence between the lines joining corresponding points and the points of the quartic curve, so that from any proposition relating to the points a proposition relating to the lines can be deduced. This transformation is expressed in elliptic functions by a quadric transformation which is equivalent to one of the forms of Landen's transformation, thus giving a geometrical interpretation in three dimensions of Landen's transformation for real arguments.

PARIS.

Academy of Sciences, July 9.—M. Albin Haller in the chair.—Gabriel **Bertrand** and Mlle. S. **Benoist** : The nature of " celloisobiose." The celloisoboise of Ost and Prosiegel and of Ost and Knoth appears from its properties to be a mixture of procellose, described by the authors in a previous communication, and cellose.—André **Blondel** : The conditions of yield of generating valve lamps having a characteristic of the singing electric arc : the definition of their power.—V. **Grignard** and R. **Escourrou** : The tertiary methylheptenols : their catalytic hydrogenation. The product of hydrogenation varies with the catalyst (platinum black, nickel), and also with the pressure of the hydrogen. The best results were obtained with nickel working under a pressure of about 15 mm. of mercury.—Serge **Bernstein** : The best approximation of functions possessing one essential singular point.—Nikola **Obrechkoff** : A problem of Laguerre. F. **Selety** : A distribution of masses with a mean density zero, without centre of gravity.—Th. De. **Donder** : The synthesis of the gravific.—André **Kling** and Arnold **Lassieur** : Aqueous solutions. A sketch of a theory explaining the behaviour of water towards indicators and the

hydrogen cell independently of the ionic hypothesis.—Pierre **Bedos** : Ortho-phenyl-cyclo-hexanol and the bromhydrin of 1·2, cyclohexane diol. Ortho-phenyl-cyclo-hexanol is the main product of the reaction between the oxide of cyclohexane and phenyl-magnesium bromide. It would appear to be a stereoisomer of the compound of the same composition obtained by Braun, Gruber and Kirschbaum by the addition of hydrogen to ortho-oxydiphenyl.—Pierre **Jolibois** and **Chassevent** : The setting of plaster. An account of experiments on the maximum solubility of anhydrous calcium sulphate as a function of the temperature to which it has been heated.—Victor **Lombard** : The permeability of nickel to hydrogen. If d expresses the volume of hydrogen passing through the nickel plate of area 1 sq. cm. then it was found that at constant difference of pressure on the two sides of the plate, $d = a^t$: at constant temperature, the yield of gas $d = K\sqrt{P}$, where P is the difference of pressure.—Roger G. **Boussu** : Contribution to the study of supersaturation. Details of experiments with supersaturated solutions of potassium bitartrate and calcium sulphate.—L. J. **Simon** : The oxidation of graphite by a mixture of silver bichromate and sulphuric acid.—H. **Gault** and G. **Ehrmann** : The soluble cellulose-ether salts of the higher fatty acids. Hydrocellulose is treated with an acid chloride and pyridine in the presence of a solvent. Descriptions of cellulose distearate, dipalmitate, and dilaurate are given.—Max and Michel **Polonovski** : Eserolmethene and its alcoholate. — F. **Delhaye** : Relations between the orogenic movements and the great depressions of Central Africa. The *graben* of Lufira (Katenga).—Mlle. J. Boisse **de Black** : The mode of formation of a *frane* in Cantal.—Allyre **Chassevant** and **Chouchak** : The measurement of the degree of ionisation of mineral waters.—H. **Ricôme** : Growth and heliotropism.—Jean **Politis** : The mitochondrial origin of the anthocyanic pigments in flowers and leaves.—M. **Piettre** : The humus in the coffee plantations in Brazil.—M. **Aron** : The influence of temperature on the action of the testicular hormone.—A. **Desgnez** and A. **Bierry** : The action of Vichy water on the urinary reaction.—Jean **Camus**, J. J. **Gournay**, and A. **Le Grand** : Experimental diabetes.—M. **Lévy-Solal** and A. **Tzanck** : Puerperal eclampsia and the phenomenon of shock. Arrest by pilocarpine.—M. **Bazin** : Animal and human neoplasms.