

## Societies and Academies.

## PARIS.

**Academy of Sciences, July 5.**—**Gabriel Bertrand** and **M. Machebeuf**: The influence of nickel and cobalt on the action exercised by insulin on the dog. The results of experiments carried out on the rabbit have been given in an earlier communication: it is now shown that the addition of cobalt and nickel to insulin causes similar effects on the dog and rabbit. There is an increase in activity in both animals; cobalt has a greater influence than nickel.—**Gaston Julia**: A series of polynomials connected with the conformal representation of simply associated areas.—**Luigi Fantappiè**: Analytical functionals which are functions of a finite number of linear functionals.—**René Lagrange**: Legendre functions of the first species and certain associated functions.—**N. Gunther**: The movement of a liquid filling a simply associated domain which is displaced.—**Henri Bénard**: The deviations of the values of the frequency of vortices alternating with respect to the law of dynamical similitude.—**Th. De Donder** and **Fr. H. van den Dungen**: The quantification deduced from Einsteinian gravific.—**Léon Brillouin**: The undulatory mechanics of Schrödinger; a general method of resolution by successive approximations.—**W. H. Keesom**: Solidified helium (*v. NATURE*, July 17, p. 81).—**Jean Lecomte**: Infra-red absorption spectra of cyclic derivatives. The infra-red absorption spectra of derivatives of benzene, cyclohexene, and cyclohexane have been compared and numerical data are given.—**René Lucas**: The rotatory power of tartaric acid. The effects of the addition of such substances as boric acid, tungstic acid, urea, etc., can be explained as being due to the appearance of one new form, strongly dextrorotatory, and in proportions varying with the reagents. It is possible that the anomalies of malic acid follow a similar mechanism.—**P. Daure**: The qualitative study of the fluorescence of bromine vapour.—**R. de Mallemann**: Magnetic rotatory dispersion and the dispersion of electric double refraction. From theoretical considerations it is concluded that the ratio of Verdet's constant to Kerr's constant should vary inversely as the wave-length, or, alternatively, the ratio of the magnetic rotatory dispersion to the dispersion of electric double refraction should be equal to the corresponding ratio of wave-lengths. This conclusion is verified experimentally for carbon disulphide and for camphor in hexane solution.—**Paul Gabriel Girault**: A possible influence of commutation on the stability of continuous current machines.—**Georges Fournier**: The absorption of  $\beta$ -rays by matter.—**D. P. Kononov**: The heats of combustion of some hydrocarbons. Values are given for the heats of combustion of cyclohexene, methylene-cyclohexane, and dicyclohexane and the figures compared with those calculated from a formula given by the author in an earlier paper.—**A. Boutaric** and **G. Corbet**: On the critical temperature of solution of acrolein and water and on the molecular mass of soluble acrolein resin. The soluble acrolein resin studied is a polymer of ten molecules of acrolein.—**Surun**: The estimation of the adsorbing power of carbons.—**E. Rouyer**: The determination of some double salts in solution by the boiling point method. Experimental data for the double sulphate of ammonium and  $\text{RSO}_4$ , where R is cadmium, iron, cobalt, manganese, zinc, magnesium, copper, and nickel, and also double chlorides of the carnallite type.—**Holweck**: The spectrometry of the  $K$  series of the light elements. The  $K$  discontinuity of fluorine.

The advantages of the method of critical potentials are emphasised; it brings out the  $K$  discontinuity of fluorine at 684.2 volts very clearly. By combining the results of several workers, the Moseley curve from helium to sulphur is shown to be a straight line.—**V. Ipatief** and **A. Andreevsky**: The displacement of platinum by hydrogen under high pressures. The precipitation of platinum from its solutions by hydrogen is a function of the temperature, pressure, concentration, and time, and results of experiments in which each of these factors was varied are given. The presence of metals such as iron and nickel, especially in acid solution, tends to retain platinum in solution.—**Daniel Florentin**: The estimation of soluble silica in cements, mortars, and concretes.—**Georges Denigès**: The action of concentrated hydrobromic and hydriodic acids on the cobalt ion. A new reaction for nickel. A description of new colour reactions of cobalt with concentrated hydrobromic and hydriodic acids and of nickel with concentrated hydriodic acid.—**André Job** and **Antoine Cassal**: The fixation of carbon monoxide on an organic magnesium compound by means of chromic chloride. A solution of phenylmagnesium bromide is without action upon carbon monoxide, but the addition of anhydrous chromium chloride causes an immediate absorption of the gas. From the products of this reaction benzopinacolone, benzophenone, benzhydrol, diphenyl, diphenyl-acetophenone, and benzaldehyde were isolated. Some chromium-carbonyl is also produced.—**Marcel Delépine**: A supposed isomer of methylene-amino-acetonitrile. Methylene-bis-imino-diacetonitrile. The substance previously described as an isomeride of methylene-aminonitrile is proved to be the methylene derivative of imino-diacetonitrile.—**Emile Votoček** and **F. Valentin**: The optical inverse of natural rhamnose. Starting with isorhodoic acid, *d*-rhamnose has been prepared; it has all the properties of natural rhamnose except that its rotation is of opposite sign.—**F. Salmon-Legagneur**: The action of ethyl-magnesium bromide on the methyl ether of the  $\alpha$ -mononitrile of camphoric acid. The products of the reaction are  $\alpha$ -ethylidene-camphidone and a secondary nitrile alcohol.—**Octave Bailly** and **Jacques Gaumé**: The synthesis and hydrolysis of glyceromonophosphoric di-ester;  $\alpha\beta$ -diglyceromonophosphoric acid and the constitution of orthophosphoric acid.—**René Delaplace**: The preparation of caesium eosinate. Caesium hydroxide is treated with the theoretical quantity of acid eosin to prepare the eosinate. Details are given of the preparation of the eosin and of the caesium hydroxide, together with the method of recovering the caesium.—**Viret**: New observations relating to the rodent fauna of Saint-Gérard-le-Puy.—**Mlle. G. Bonne**: The nature of the floral section in the *Chrysobalanæ*.—**M. Bridel** and **C. Béguin**: A new glucoside, hydrolysable by rhamno-diastase, extracted from the fresh flowers of *Ulex europæus*. Details of the extraction, chemical and physical properties of a new glucoside, to which is given the name ulexoside. This gives the methyl-pentose reaction, and can be hydrolysed by rhamno-diastase giving a sugar and ulexogenol.—**A. Sartory**, **R. Sartory**, and **J. Meyer**: The study of the action of radium on *Aspergillus fumigatus* in culture on dissociated and non-dissociated media.—**M. and Mme. A. Chauchard**: The action of curare on the electrical apparatus of the torpedo (*Torpedo marmorata*). The curarisation of the electrical apparatus of the torpedo necessitates the use of relatively large doses of curare. The poison does not act on the nerve but on the electrical organ.—**G. A. Nadson** and **M. N. Meisl**: The mechanism of the action of chloroform on living matter. Description of the action of chloroform on

a yeast (*Saccharomyces Ludwigii*), the observations being so arranged that the same cell was studied throughout.—Pierre Girard and Edouard Peyre: The suppression of shock and modification of the anaphylactic sensibilisation by certain fluorescent colouring matters. The colloidal mechanism.—Charles Pérez: Some secondary sexual characters in Galathea.—Louis Roule and Léon Bertin: The development with complex metamorphoses (hypermetamorphosis) of *Nemichthys scolopaceus*.—Paul Mathias: The evolutive cycle of a trematode of the family of the Echinostomidae (*Echinoparyphium recurvatum*).—Robert Regnier and Roger Pussard: The constitution of the reserve stores of *Microtus arvalis* (field mouse), and its importance for the multiplication of this rodent.—E. Aubel and L. Genevois: Researches on the reduction of thionine by various organic substances, in the absence of air and light.—L. Lutz: The soluble ferments secreted by the Hymenomyces. Oxidising actions.—J. Sabrazès: Spirochaetes in experimental peritonitis by intestinal perforation in the guinea-pig.

## CAPE TOWN.

Royal Society of South Africa, June 16.—K. H. Barnard: A study of the freshwater isopodan and amphipodan Crustacea of South Africa. A general account of the biology of *Phreatoicus capensis*, including a curious habit of aestivation, and certain tendencies to variation, is given. *P. capensis* is closely allied to *P. australis*; both forms are regarded as being the direct descendants of the ancestral stirps represented by the fossil species *wianamattensis*. A freshwater isopod of the family Jæridæ having affinities with the Australian genus *Heterias* is described. Several new species of 'blind' gammarids are described; the localised habitat of these 'blind' species is contrasted with the wider distribution of the single black-eyed species. *Phreatoicus capensis* is confined to old and mature valleys in the less highly tilted mountains, and is not found now outside the limits of the effective deposition of moisture from the clouds formed by the S.E. Trade winds. The finding of a fossil species of *Phreatoicus* shows that the tribe was both austrogeogenic and palaeogenic, and rules out the theory of a migration of northern Crustacea via the Andes into Australasia.—S. H. Haughton: The river system of S.W. Gordonia: In the last few miles of its course, the Molopo River shows all the characters of rejuvenation impressed upon a mature stream—waterfalls, a winding deep gorge, and old river-gravels. This rejuvenation is due to the recession of the Auhrabies Falls past the mouth of the Molopo and the consequent cutting-back of the Molopo Falls to their present position. There is no permanent stream in the Molopo now. The tributaries of the Orange to the west of the Molopo in Gordonia have arrived at a more mature stage, although they are deeply entrenched. The cessation of erosive action in S.W. Gordonia seems to have been an event of geologically recent date.—B. F. J. Schonland and J. Craib: Measurements of the electric fields of thunderstorms. An observatory for the study of electrical meteorology was established on the farm Gardiol, near Somerset East, in January 1926, and a photographic recording apparatus similar to that designed by C. T. R. Wilson has been in use.

## ROME.

Pontifical Academy of Sciences (Nuovi Lincei), May 24.—Stein: Double stars in the astrographic catalogue of the Vatican zone.—Colonnetti: Experi-

mental investigations on elastic co-actions.—Sesini: Elastic co-actions.—Pugno: Study of the compensators in use in optical experiments on elasticity.—Luigioni: New species of blind coleoptera (*Duvalites Franchetti*) discovered by Baron Carlo Franchetti in a grotto near Subiaco (Central Italy).—Luigioni: The specific validity of *Anoxia sicula*.—Pagnini: The hypotheses serving as foundation for the undulatory theory of light.—Palazzo: Geophysical observations relating to the total eclipse of the sun.—Palazzo: The magnetic contour of Somaliland.—Silvestri: Pseudonummulites in the tertiaries of Tuscany.

## SYDNEY.

Linnean Society of New South Wales, May 26.—Rev. H. M. R. Rupp: Further notes on the genus *Pterostylis*. Records are given of five additional species, together with corrections and additions to some of the previous notes on the genus.—E. W. Ferguson: Revision of Australian Syrphidæ (Pt. 1). Little attempt has hitherto been made to deal systematically with the Australian species. Keys for the separation of the subfamilies, and for the identification of the species of *Ceriodes*, *Eristalis*, *Helophilus* and *Microdon* are given. Twenty-three species are described as new.—P. D. F. Murray: An experimental study of the development of the limbs of the chick. Grafts on to the chorio-allantoic membranes of seven-day chicks, of the limb buds and fragments of limb buds of three-, four- and five-day chicks, and of limb *anlagen* at earlier stages, show the limb *anlagen* to have in a high degree the power of self-differentiation, their development being apparently independent of other regions of the chick, except for the blood supply. The limb bud is a mosaic structure. Ends of skeletal elements may develop normal joint structures in the absence of the neighbouring element upon which the joint would normally work.—R. Greig-Smith: The influence of certain colloids upon fermentation (Pt. 3). Fuller's earth and aeration in the alcoholic fermentation. Judging by the action of fuller's earth, the mineral colloids have an action of their own in accelerating the activity of yeast in the fermentation of dextrose. Their faculty of assisting the dispersal of dissolved carbon dioxide does not explain their action, for when the fermenting fluids were aerated, the colloid still hastened the fermentation.

## VIENNA.

Academy of Sciences, June 17.—V. Oberguggenberger: The scintillation of the stars. A coarse diffraction grating was fixed to a telescope so that the grid was parallel to the daily motion. The telescope being fixed, the star traversed the field and showed a spectrum trace on the photographic plate. In this way the Innsbruck Observatory has examined the frequency of the scintillation.—G. Rzimann: The formation of organs from adventitious buds in *Tolmiea Menziesii*. An attempt to trace the influence of the ratio between carbohydrates and mineral salts in forming leaves or roots.—M. Kofler: A simple definition of the inconstancy of a natural phenomenon.—J. Pircher: An apparatus for registering the squalliness of the wind connected to a Dines' anemograph.—V. Conrad: Fluctuations of seismic activity in various fold-regions.—A. Wagner: Wind registrations on the 150-metre high radio tower at Altenburg, Germany.—W. Schmidt: Experiments with models on the influence of the rotation of the earth on the course of rivers.