

applied to the Board of Longitude for assistance in preparing the catalogue for the press. It ultimately appeared in 1832, the year Groombridge died, but owing to errors was suppressed. Its revision was due to Airy. Elected fellow of the Royal Society in 1812, Groombridge was one of the founders of the Royal Astronomical Society. He died on March 30, 1832 and was buried at Goudhurst.

## Societies and Academies

### LONDON

Society of Public Analysts, December 6. C. H. CRIBB : A specific gravity apparatus. In order to avoid the necessity for a water-bath with thermostatic control, the bottle, which has a thermometer stopper, is provided with a glass bulb sufficiently heavy to sink in any ordinary fluid and having a diameter about twice that of the neck of the bottle. With this addition, the adjustment of temperature can be made to within a tenth of a degree in the course of a few minutes. G. F. HALL and W. M. KEIGHTLEY : The excretion of aloes. Applying their modification of the Schoutelen reaction, the authors have shown that it is possible in some cases to detect unhydrolysed aloin in the urine for periods up to 60 hours after the aloes have been taken. The unhydrolysed material can be detected at a later period than the hydrolysed drug, since the Schoutelen test is more sensitive than the Bornträger test (for the hydrolysed drug). H. E. COX : Chemical examination of furs in relation to dermatitis. (4). Chemical reactions of dyeing with *p*-phenylene diamine and *p*-amino phenol. A quantitative study of the oxidation of *p*-phenylenediamine by hydrogen peroxide in the presence of fur shows that the principal pigment formed is an azine combined with the fur proteins. Some Bandrowski's base is found on the surface of the fibres, and there exists in the solution in the dye-bath much free *p*-phenylenediamine unoxidised, together with some Bandrowski's base and traces of quinone and ammonia. Similar data are given in respect of *p*-aminophenol, which forms an oxazine in an analogous manner. The occurrence and properties of intermediate oxidation products in relation to dermatitis are discussed. JOHN GOLDING : Use of the air-damped balance for the determination of total solids in milk. Very rapid determinations of milk solids can be made by evaporating about 1 gm. of the milk in an aluminium cap (which cools very rapidly) and weighing the residue on an air-damped prismatic reflecting balance (Oertling). The influence of the time of drying on the results is shown in a series of tables. G. G. RAO and K. M. PANDALAI : Rapid method of determining minute quantities of nitrites. An iodimetric method has been devised in which the iodine liberated by the interaction of nitrous acid and hydrogen iodide is titrated in the presence of carbon dioxide evolved within the liquid itself. This prevents oxidation of the nitric oxide, also formed in the reaction, and expels it from the system, thereby eliminating the action of the resulting nitrogen peroxide on the iodide.

### PARIS

Academy of Sciences, December 4 (*C.R.*, 197, 1369-1472). EMILE BOREL : The determination of the probability of series of rainy days and fine weather at the Parc Saint-Maur. HADAMARD : Observations on a recent note of Sixto Rios. Reply to a criticism by Sixto Rios of a result of Mandelbrojt. GABRIEL

BERTRAND and Mlle. M. ANDREITCHEVA : The comparative proportions of zinc in green and etiolated leaves. There is a relation between the amount of zinc present in leaves and the coloration by chlorophyll. There is 2-3 times as much zinc in external green leaves as in the internal yellow leaves. Where the etiolation is artificial the difference is greater. LOUIS DE BROGLIE : The density of energy in the theory of light. RENÉ THIRY was elected *Correspondant* for the Section of Mechanics. E. J. GUMBEL : The limiting distribution of the greatest value amongst the smallest. RICHARD OBLÁTH : The theory of cubic constructions. H. AUERBACH : The number of generators of a limited linear group. RENÉ DUGAS : The establishment of Schrödinger's equation. BONNIER and MOYNOT : The possible consequences of the use, in internal combustion engines, of hydrocarbons with a high antidetonating value. The adoption of anti-knock has not the same effect in all engines. In an engine which is normally in detonation, as is the case for many aviation engines, the change of the fuel produces a rise in the temperature of the escaping gases. In engines less pushed, with little or no detonation, the variation of the escaping gas temperature is less marked. JEAN CHAZY : The uniform integrals of the problem of three bodies. JULES GÉHÉNAU : The fundamental laws of the L. de Broglie wave in the gravific of Th. De Donder. PIERRE VERNOTTE : The absolute measurement of the coefficients of thermal conductivity of gases. The apparatus described avoids the complication due to convection. MICHEL ANASTASIADIS : The mechanism of rectification in copper sulphide-magnesium rectifiers. According to the author's theory, cuprous sulphide is produced from the cupric sulphide, and the rectification is mainly due to the contact Mg/Cu<sub>2</sub>S. E. THELLIER : The permanent magnetism of fired earths. A brick earth, heated uniformly in a magnetic field, is uniformly magnetised, this magnetisation depending on the conditions of time, temperature and atmosphere of the furnace. The magnetisation is permanent. J. GENARD : The magnetic extinction of the fluorescence of diatomic molecules of sulphur. The action of the magnetic field on the fluorescence of sulphur vapour is complex. Some lines are extinguished, others appear to be unaffected, whilst some are strongly enhanced. E. RINCK : Solidification diagrams of alloys formed by two alkali metals. The sodium-rubidium alloys. No evidence was obtained of the existence of the compound Na<sub>2</sub>Rb corresponding to the compound Na<sub>2</sub>K. PIERRE AUGER and G. MONOD-HERZEN : The presence of neutrons in cosmic radiation. MARCEL GODCHOT, ETIENNE CANALS and Mlle. GERMAINE CAUQUIL : The Raman spectrum of some substituted cyclenic hydrocarbons. JEAN COURNOT and HENRI FOURNIER : Comparative results of the measurement of corrosion. ALBERT SAINT-MAXEN and EMILE DUREUIL : The absorption spectrum of the diphenols in alkaline medium. The results confirm the hypothesis of Euler and van Bolin, relating to the existence of a compound of quinone structure in alkaline solutions of hydroquinol. AUGUSTIN BOUTARIC, MAURICE PIETTRE and Mlle. MADELEINE ROY : The physicochemical study of the flocculation of myxoprotein by resorcinol. PICON : The titanium sulphides. A description of the preparation and isolation of three new sulphides, Ti<sub>3</sub>S<sub>5</sub>, Ti<sub>3</sub>S<sub>4</sub> and Ti<sub>3</sub>S<sub>3</sub>. B. BOGIRCH : The preparation of ferrochrome in the electric furnace. Description of experiments on the semi-industrial scale on the

direct reduction of chromite by retort carbon. AUGUSTIN MACHE: Contribution to the study of hydraulic mortars. A. MAILLARD: The hydrogenation of naphthalene. A study of the causes of the anomalies found in the hydrogenation of naphthalene in the presence of catalysts. In the gas phase, there are two successive reactions producing the tetra and hexa hydrogen addition compounds. The reaction  $C_{10}H_8 + 5H_2 = C_{10}H_{18}$  has not been observed. D. LIBERMANN: The preparation of the salts of trioxytriarylsulphonium derivatives of the para and ortho substituted phenols and on the arylsulphonium bases. PAUL CORDIER: The condensation of benzylpyruvic acid with benzyl cyanide. An acid nitrile is formed by this condensation: the corresponding dicarboxylic acid is unstable, it loses water and is converted by an isomeric change into the anhydride of an ethylene dicarboxylic acid. ANTOINE WILLEMART: Isomeric transformations of the hydrocarbons  $C_{42}H_{30}$ , isomers of 1, 3, 1', 3', tetraphenyl-1, 1'-dihydrotoluene. GEORGES RICHARD: An oxido-reduction of 1-chloro-1, 2-diphenylethanol and on a supposed toluene oxide. MARCEL TUOT: Some ethylene and saturated hydrocarbons containing eight and eleven atoms of carbon. PAUL GAUBERT: Liquid crystals produced by the evaporation or cooling of an aqueous solution of tartrazine. ROBERT LAFFITE: The tectonic of the south of the massif of Aurès. ALBERT DE LAPPARENT: The synclinal of Rians (Var). J. P. ROTHE: Morphological observations at Scoresby Sound. RAYMOND CIRY: The eastern termination of the primary Asturian massif and the structure of the Mesozoic region which envelopes it towards the east. G. DEDEBANT: The envelopes of isobars. F. M. BERGOUNIOUX: Remarks on the fossil Chelonians of the family of Amphichelydæ. W. C. DARRAH and P. BERTRAND: Observations on the flora of the Pennsylvanian coal measures (regions of Wilkes-Barre and Pittsburgh). MLE. A. MICHAUX: The calcium contents of striated muscle and liver in normal guinea pigs and guinea pigs suffering from starvation, acute scurvy or chronic scurvy. RENÉ HAZARD: Potassium, an element producing adrenaline. The effects produced by the injection of solutions of potassium chloride resemble those produced by adrenaline. N. KOBOZIEFF: The diversity of the genotypical constitution on mice with a normal tail. ETIENNE WOLFF: The experimental production of otocephaly and the principal malformations of the face in the fowl. D. BACH and D. DESBORDES: The direct transformation of nitrates into ammonia by the mycelium of the lower fungi. A. and R. SARTORY and J. MEYER: The evolutive cycle of the Actinomyces in cultures after passage through a collodion ultra-filter. J. LAIGRET: The reproduction of murine leprosy in the guinea pig and rabbit, treated with an acetone extract of tubercle bacilli. VICTOR PAUCHET, PIERRE ROSENTHAL and HENRI BERTREUX: The treatment of surgical shock by fresh embryonic juices.

## GENEVA

Society of Physics and Natural History, October 19. E. JOUKOWSKY and CHARREY: A levigator with immovable liquid medium. The authors have constructed an apparatus in which the precipitation takes place in a cylindrical tube. A sand can be separated into a very large number of sizes, up to complete precipitation, and a large number of points on the curve of precipitation can be determined. LÉON W. COLLET: The gneissic mylonites of the

southern side of the Tour Sallières. The author describes four different outcrops of gneissic mylonites in the sedimentary substratum of the Morcles Nappe. Two of these lenticles are located on the thrust plane of the Nappe. The two others are situated at the base of slices of the autochthonous rock and are in relation with crystalline wedges of the Aiguilles Rouges massif. STUDER: Geological sketch of the neighbourhood of Renéville, French Congo.

## ROME

Royal National Academy of the Lincei, June 18. A. BEMPORAD: Stellar currents about R.A.  $13^h + 52^{\circ}$  Decl. E. ALMANZI: Deformations of elastic strips (7). P. VINASSA DE REGNY: Age of the white chalk of Mount Casale, near Palermo. Fossil studies show that the Mount Casale deposits must be ascribed, not to the Lower Lias, but to the Trias. L. PETRI: Ionising action of fresh vegetable tissue pulp and mitogenetic radiations. In continuation of earlier work, it is found that, with potatoes, the emission of mitogenetic radiations ceases and oxidation processes are greatly enfeebled when the tubers are cooked, whereas in the live tubers oxidising enzymes are very active. A. DEL CHIARO: An inequality of Jensen. I. OPATOWSKI: Biharmonic functions as products analogous to Lamé's products, and the lines of force of Newtonian fields (1). J. C. VIGNAUX: A theorem on the double integrals of Abel and Laplace. G. KRALL: Motion of a planetary system of  $(n + 1)$  rigid bodies; its stationary limiting aspects. Proof is given of the statement made in an earlier communication: celestial bodies having the structure of a planetary system, subject to tides or any internal dissipative actions, tend to have their baricentres on a straight line revolving with uniform velocity round the common baricentre in a plane determined by the initial data. A. COLACEVICH: Excess of colour and the K calcium line in interstellar absorption. NELLA MORTARA: The use of liquid air for the purification of radium emanation. B. ROSSI: The disintegration of lead by the effect of penetrating radiation. G. A. BARBIERI: A new type of complex compounds of bivalent silver. The anhydrous salt, silver picolinate,  $Ag(C_6H_4N.CO)_2$ , is described. A. BARONI: Mixed sulphonic anhydrides (1): Preparation of acetosulphonic anhydrides. Mixed anhydrides of acetic acid with methane-, ethane-, benzene- and *p*-toluene-sulphonic acids have been obtained by the action of the chlorides of the sulphonic acids on silver and sodium acetate. The mechanism of the decomposition of these anhydrides seems to be of the same type as that of mixed anhydrides of ordinary organic acids. F. P. MAZZA and A. CIMMINO: Dehydrogenase activity of *Bacillus coli communis* on higher fatty acids. Palmitic, oleic and, especially, stearic acid are dehydrogenated by this organism. The velocity of the action diminishes in the fatty acid series with increase of the molecular weight up to the  $C_6$  or  $C_8$  member and afterwards increases continuously. G. PICCARDI: Detection of europium, and three lines of extreme sensitivity. The flame spectra of certain mixtures of rare earth oxides revealed three intense europium lines of wave-lengths 4461, 4627 and 4594, which at low temperatures are highly sensitive. A. CHIARUGI: Development of the female gametophyte of *Weddellina squamulosa*, Tul. (Podostemonaceæ). PAOLA PARDI: Contribution to the cariology of the Asclepiadaceæ. B. DE LERMA: The pharyngeal bodies of the Orthoptera; proof of the existence of endocrine glands in arthropods.