

500–1,000 million years, whilst the half-life period of rubidium is between  $2 \times 10^{11}$  and  $4 \times 10^{11}$  years.

An investigation of the isotopic constitution of the strontium from the mineral throws much light on its origin. This has been carried out by Mattauch (*Naturwiss.*, 25, 189; 1937), who finds the strontium to contain 99.97 per cent of the isotope of strontium of mass 87. It is therefore very probable that the  $\beta$ -radioactive disintegration of  $^{87}\text{Rb}$  results in the formation of  $^{87}\text{Sr}$ . This is in agreement with the rule that stable isobares of neighbouring elements do not exist. A rough estimate of the quantity of strontium produced during the life of the mica shows that the half-life period of radioactive rubidium is more nearly  $2 \times 10^{11}$  years than the upper limit mentioned above.

### University Events

CAPE TOWN.—Prof. A. W. Falconer has been appointed to succeed Sir Carruthers Beattie as principal and vice-chancellor of the University. Sir Carruthers Beattie will retire at the end of the year. Prof. Falconer is at present professor of medicine in the University.

CAMBRIDGE.—T. R. C. Fox, of Jesus College, and J. Diamond, of St. John's College, have been appointed demonstrators in engineering.

Dr. R. A. Lyttleton and M. H. L. Price have been appointed Faculty assistant lecturers in mathematics.

J. Hart-Mercer has been elected to the Gwynaeth Pretty studentship and to the Nita King scholarship.

At St. John's College, a Strathcona exhibition for physics has been awarded to R. E. B. Makinson, University of Sydney, and a Hutchinson studentship for zoology to J. H. Sang, University of Aberdeen.

### Science News a Century Ago

#### J. D. Forbes among the Dolomites

IN the course of his Continental tour of 1837, J. D. Forbes after leaving southern Germany explored the Tyrol and early in September entered the then little-known 'Dolomite' country, proceeding in the direction of the peak of Marmolata. In his journal, under the date September 14, he said: "This morning, whilst warming myself dreamily during the rain at the kitchen fire at Cavalese, I got an excellent geological lesson from the boiling of certain thin porridge made of Indian corn (polenta) and milk. The air-bubbles disengaged during the process formed the most beautiful elevation craters, often with little interior ones, formed by the immediate sequence of another bubble at the same point. . . . I walked from Cavalese to Vigo, in order to understand fully Von Buch's section of the adjacent beds of rock, and in this I succeeded beyond my expectations. But the strata of limestone and sandstone do not all dip towards the axis, as he has represented, but some from it, and with evident disturbance. I went in search of minerals to a dealer's, but only found some very indifferent specimens.

"The scenery from Vigo to Campedello, and from that to Canazea, is in the highest degree striking—in fact, I know nothing of its kind to compare with it: one is entirely surrounded by jagged peaks of

dolomite. The amazing crags of the Lang Kofel come into view near Campedello, and afterwards the magnificent outworks of the Marmolata and Sasso di Val Fredda are seen in all their majestic beauty. As I wished to examine the Lang Kofel more minutely, as well as Von Buch's sections between Gröden and Colfusco in the Abteier-Thal, I availed myself of a tolerable horse track which wound through the forest, and after passing close under the precipices of the Lang Kofel, entered the Grödener-Thal. . . ."

Prof. William Ritchie, F.R.S.

ON September 15, 1837, William Ritchie, the professor of natural philosophy at the Royal Institution and also in University College, London, died at the age of forty-seven years. Born in Scotland in 1790, he was educated for the ministry and became Rector of the Royal Academy of Tain, Ross-shire. Having saved money he went to Paris, where he attended the lectures of Thénard, Gay-Lussac and Biot and on his return to England became known to Sir John Herschel. Papers he contributed to the Royal Society on a differential thermometer and radiant heat brought him into notice, and in 1829 he was given the professorship at the Royal Institution and in 1832 that at University College. He published papers in the *Philosophical Magazine* and other periodicals and made researches in electricity and electric magnetism. He was also known as a skilful experimentalist, and at one time was engaged on experiments connected with the manufacture of glass for optical purposes.

#### Animal Magnetism

THE *Gentleman's Magazine* of September 1837 gives the following information: "At the North London Hospital, M. Duportet, the French professor of animal magnetism, lately performed some experiments before a party. He commenced his operations on a young girl, about 17 years old, an inmate of the hospital, who has been ill for some time, but who is at present almost convalescent. She was seated in a chair in the middle of one of the wards, and M. Duportet seated opposite to her commenced the operation of magnetizing, which is done by waving the hand up and down in a perpendicular line before the face and body, as closely as possible without almost actual contact. After these motions of the hand had been continued for some minutes without effect, the professor, nothing disconcerted, left off, and another patient was introduced, who, we understood, had been operated upon more than once, deriving, it is stated, some benefit in her health. She was a young woman named Lucy Clarke, who having for some time past been subject to epileptic fits, had been induced to come to the hospital from Tottenham, where she resided, that the experiment might be made upon her. As soon as she was seated Prof. Duportet commenced the wafting of his hands, and in a few seconds an appearance of extreme drowsiness became evident to all who stood around his chair, and she frequently rubbed her eyes as children do when sleepy. She at length ceased to have the power of opening her eyes. The magnetizer, however, who had placed her under the spell, had the power also of restoring her to a state of wakefulness. This he did by placing his fingers on the centre of the forehead and drawing them asunder towards the temples, and afterwards waving the hand to and fro before her face."

## Cholera in Europe

AN editorial in the *Lancet* of September 23, 1837, gives the following account of a pandemic of cholera at that time: "The cholera—that terrible epidemic, which after having exercised its ravages in all parts of the old and new world, seemed on the point of returning to the country which gave it birth, has again appeared raging with unabated violence not only in many of the southern States of Europe, but in some of the northern kingdoms, already more than once visited by the pestilence. Our readers are doubtless aware that the Asiatic cholera has been stalking along the Mediterranean shores of Europe for the last two or three years, and that, at the time we write, it has reached the capital of the Papal dominions. The progress of the disease through countries, the inhabitants of which are forcibly kept by their rulers in a state of ignorance, has been almost universally accompanied by disorder of the most serious nature.

"At Palermo the Governor has fallen a victim to the fury of a terrified and excited populace; and at Rome, if we are to believe the reports which have just reached us, the medical men are everywhere compelled to conceal themselves in order to avoid sharing the fate of several of their brethren, who are massacred during the period of excitement and consternation, which are produced at the onset of the malady. Marseille also has been attacked, for the third time, by the epidemic, which during several days carried off nearly 100 persons daily, and we are sorry to announce that the disease is spreading rapidly throughout the department of which that city forms the capital".

## Societies and Academies

## Paris

Academy of Sciences, July 5 (*C.R.*, 205, 1-96).

WOLFGANG DÖBLIN: The elements of a general theory of the simple constant chains of Markoff.

KENTARO YANO: Totally geodesic non-holonomic spaces.

MARCEL BRELOT: The best harmonic majorant of a sub-harmonic function.

RAPHAËL SALEM: A method of summation nearly always valid for Fourier's series of continuous functions.

NATAN ARONSAJN: A theorem of the theory of analytical functions of several complex variables.

JEAN LERAY and LOUIS ROBIN: Complement to the study of the movement of an unlimited viscous liquid.

PIERRE VERNOTTE: Navier's equations and the dissipation function, in a hydraulic system. The thermal phenomena produced in the fluid by a rapid movement.

MAX TEISSIE SOLIER, LUIS CASTAGNETTO and MARCEL SABATHE: The beats which accompany the formation of the alternate vortices of Bénard-Karman.

ANDRÉ LICHNEROWICZ: Extension of the Gauss-Whittaker theorem.

FRITZ LONDON: The quantum theory of the diamagnetism of aromatic compounds.

TH. DE DONDER and J. GÉHÉNIAU: The electronic model of Dirac's wave mechanics.

JEAN JAFFRAY: Observation of the stratified Geissler discharge in different gases at atmospheric pressure. Under certain conditions, described in

detail, stratification can be seen and photographed in Geissler tubes containing various gases at nearly atmospheric pressure.

FRANTZ PERRIER: The action of an electric field on an electrified insulator placed in air: the ionization of the latter.

ALEXANDRE DAUVILLIER: A universal counter. A modification of the Geiger-Müller counter, utilizing Richter and Geffcken relays with Neher and Harper mounting. The working voltage can be reduced to 300 volts, and the arrangement is suitable for measuring the intensity of the cosmic rays with captive balloons.

GEORGES AHIER: Christiansen filters. These filters are cells containing a transparent powder mixed with a liquid of the same refractive index. Study of the results obtained by varying the solid (flint and crown glass, fused silica, fluorspar) and the liquid.

CASIMIR JAUSSEMAN, LÉON GRILLET and MICHEL DUFFEUX: The fine structure of the 5998.9 band of nitric oxide.

BERTRAND GOLDSCHMIDT: Study of the fractionation coefficients of salts possessing several hydrates. Study of the crystallization of barium acetate, with actinium X as indicator, and of strontium nitrate in presence of a trace of lead nitrate, with thorium B as indicator.

JEAN PERREU: The equation of solubility of a pure substance forming a solid compound with the solvent. Control of a differential equation obtained theoretically by an experimental study of the system sodium iodide and acetone.

MARTIAL FÉLIX TABOURY and MARCEL BELLOT: The action of light on the Liesegang phenomenon.

HALDUN N. TEREM: The oxidation of beryllium bronzes.

EUGÈNE CATTELAINE and PIERRE CHABRIER: Contribution to the separation of the phosphoric ion and its estimation by a volumetric method.

JEAN BARON and PAUL LAFFITTE: The inflammation of acetaldehyde. Determinations of the temperatures of spontaneous inflammation of various ternary mixtures of acetaldehyde and oxygen with nitrogen, argon or carbon dioxide as diluent.

MARC TIFFENEAU, PAUL WEILL and BIANCA TCHOUBAR: The isomerization of cyclohexane methylene oxide into hexahydrobenzaldehyde, and the conversion of the corresponding amino-alcohol into cycloheptanone.

MARCEL SOMMELET: A particular mode of intramolecular rearrangement. Study of the decomposition by heat of  $(C_6H_5)_2CH-N(CH_3)_2OH$ .

WERNER LIPSCHITZ and ERNST BÜDING: The *d*- and *l*-borneolglucosides.

PANOS GRAMMATIKAKIS: Some modes of hydrolysis of the substituted *N*-benzaldoximes.

JEAN KANDEL: The hydrocarbons, halogen derivatives, ethers and esters corresponding to tetrahydroionol.

JOSEPH HOCH: Contribution to the study of substances with female hormone properties. The synthesis of 2-oxo-6,7,8,9-tetrahydro-4,5-benzoacene-naphthene.

ANDRÉ GUILLEMONAT: The oxidation by selenious oxide of cyclohexene and of the 3 and 4 nonenes.

RAYMOND HOCART: The structural scheme of proustite and pyrrargyrite.

ANDRÉ VATAN: The comparative mineralogy of the sandy sediments of the Paris basin.

J. GOURC and FRANCK BOURDIER: Pollen analysis and stratigraphical position of the Quaternary lignites of the Chambéry region.