

## Science News a Century Ago

### Philip Kelland appointed to Edinburgh

ON June 20, 1838, *The Times* announced that Mr. Kelland had been appointed to the chair of mathematics in the University of Edinburgh. The vacancy had been caused through the resignation on account of ill-health of Prof. William Wallace (1768-1843), who had held the chair since 1819. Kelland was the son of a clergyman and was born at Dunster, Somerset, in 1808. Entering Queens' College, Cambridge, he graduated in 1834 as senior wrangler and Smith's Prizeman, and for three years was a tutor. He held the professorship at Edinburgh until his death on May 7, 1879. Among his writings were a "Theory of Heat", papers on the motion of waves, the article on algebra in the ninth edition of the "Encyclopædia Britannica" and an introduction to quaternions. At the time of his death he was president of the Royal Society of Edinburgh. As a teacher he was unequalled.

### Wheatstone and the Stereoscope

THE meeting of the Royal Society held on June 21, 1838, was the last before the long vacation. One of the papers was by Whewell on tides, and another was by Wheatstone entitled "Contributions to the Physiology of Vision. Part I. On some remarkable and hitherto unobserved Phenomena of Binocular Vision". In his paper, Wheatstone showed that the perspective projections of an object upon the two retinae differ according to the distance at which the object is placed before the eyes; if it be placed so distant that to view it the optic axes must be parallel, the two projections are precisely similar, but if it be placed so near that to regard it the optic axes must converge, a different perspective projection is presented to each eye, and these perspectives become more dissimilar as the convergence of the optic axes becomes greater. Notwithstanding this dissimilarity between the two pictures, which is in some cases very great, the object is still seen single, contrary to the very prevalent metaphysical opinion that the single appearance of objects seen by both eyes is owing to their features falling on corresponding points of the two retinae. To illustrate some of his views, Wheatstone used an apparatus called by him a stereoscope.

### The Newcastle and Carlisle Railway

AMONG the British railways opened in 1838 was that from Newcastle to Carlisle, a distance of sixty-one miles, which was inaugurated with much ceremony on June 18. Describing the event, the *Tyne Mercury* said: "The anniversary of the battle of Waterloo, which crowned the British arms with success and restored peace to Europe, was selected as the day on which to celebrate the event, and one of the engines is named *Wellington*. Different portions of the railway have been opened from time to time, and made available for the commerce of the north; but on Monday the whole line was passed over for the first time. The engines started in the following order:—First the *Rapid*, as an advanced guard and without any train, displaying the Union Jack, next the *Meteor* with four carriages and a flag on which was inscribed 'England expects every man to do his duty'. In this train we observed the mayor of Newcastle and his friends with the Allenheads band; then followed the *Victoria* with nine carriages, the

*Wellington* with nine, the *Nelson* with seven, the *Lightning* with ten and the Carlisle band; next the *Tyne* with its steam organ and nine carriages; after these came the *Carlisle* with eight, the *Eden* with ten, the *Goliath* with nineteen and about 600 passengers, then the *Atlas* with seventeen, next the *Samson* with eleven. . . . The *Newcastle* with nine . . . followed by the *Hercules*, the last of the list, with eight carriages." The *Tyne Mercury* estimated that the trains carried more than 3,500 passengers, and the procession when in motion extended over one and a half miles.

### Disease Among Troops in West Indies

IN a paper read before the Statistical Society on June 18, 1838, and published in the *Athenæum* of June 30, on the sickness and mortality among the troops in the West Indies, Mr. Henry Marshall, deputy inspector-general of hospitals, and Captain Tulloch came to the conclusion that many of the opinions hitherto entertained of the nature and influence of the causes of diseases in the West Indies must have been adopted on inadequate evidence, since it appeared that no uniform effects were produced by exposure to a high temperature, by excess of moisture, by the combined effects of high temperature and great moisture, by the absence of trade winds during the sickly season, by the supposed influence of miasma from the South American continent, or by the physical and geographical character of the soil. In the absence of all tenable and consistent theories to account for the high mortality of the white troops in the West Indies, the suggestion was made that experiments should be undertaken on the electrical condition of the atmosphere during epidemic periods, the development of electrical phenomena being known to be intimately connected with heat and moisture, and to exercise an influence on vegetation.

### Electric and Crystalline Polarity

FARADAY'S first entry in his Diary for June 21, 1838, is: "Experimented on the effect of Polar arrangement of the particles of crystals on their specific inductive capacity, i.e., on their inductive capacity in different directions." The work thus begun evidently occupied him for the greater part of the summer, for the entries continue until August 14. The apparatus used was simple. Cubes of various crystalline materials, for example, Iceland spar and rock crystal, were cut with their faces parallel and perpendicular to the crystal axes. The cube under experiment was placed on a stand, and a brass ball, connected to a Leyden battery by which it was kept uniformly electrified, brought up to one face. The induction through the crystal was measured by means of a Coulomb torsion electrometer, the carrier ball of which was brought up to the opposite face.

A large number of measurements of the inductive capacity of the materials was made in directions parallel to and transverse to the crystalline axis, in the hope of detecting some difference. The experiments were afterwards described in the Fourteenth Series of the "Experimental Researches in Electricity", and although Faraday says that he "sought with great anxiety for a relation between electric polarity and that of crystallization", he came reluctantly to the conclusion that his results had "not established any connection of the kind sought for".

## Retirement of Olinthus Gregory

IN its issue of June 23, 1838, the *Mechanics' Magazine* said: "We understand that Dr. Olinthus Gregory, who has for the long period of thirty-five years presided over the Royal Military Academy, Woolwich, with so much credit to himself and advantage to the public service, and whose numerous scientific works have contributed so much to the promotion of practical science, has been permitted to retire from the Professorship of Mathematics at Woolwich. He is succeeded in the professorship by Mr. S. H. Christie, Secretary to the Royal Society who took a high degree at Cambridge many years ago, and who has been connected with the Royal Military Academy, we believe, about 32 years."

Olinthus Gilbert Gregory (1774-1841), who was born in Huntingdonshire of humble parentage, owed his early training in mathematics to the Leicestershire botanist, Richard Weston (1733-1806). He was in turn sub-editor of a newspaper, a bookseller and a private teacher. Becoming known to Charles Hutton, the professor of mathematics at Woolwich, and the editor of the *Ladies' Diary*, in 1802 he was made a master in the Royal Military Academy and in 1807 succeeded to Hutton's chair. Among his contributions to science were his experiments on the velocity of sound. He was one of the projectors of University College, London, and his name was inscribed on the stone laid in Gower Street on April 30, 1827.

## University Events

**BIRMINGHAM.**—The new Hospital Centre and Medical School are to be opened by the King and Queen on July 14, and to mark the occasion, at the degree congregation on July 2, the honorary degree of LL.D. is to be conferred on the following: Viscount Nuffield, who has contributed nearly £200,000 to the Hospital Centre; Mr. Harry Vincent, who besides being a generous supporter has given much time and energy to the working out of the scheme; Colonel Sir Bertram Ford, chairman of the Board of Management of the Birmingham Hospitals Contributory Association; Dr. Robert Hutchison, president of the Royal College of Physicians; Sir Cuthbert Wallace, president of the Royal College of Surgeons; and Sir Edward Mellanby, secretary to the Medical Research Council.

**CAMBRIDGE.**—Prof. Eileen Power, professor of economic history in the University of London, has been elected to an honorary fellowship at Girton College.

**OXFORD.**—In Convocation on June 14, it was agreed to confer the honorary degree of D.Sc. on Prof. C. G. Jung, professor of psychology at the Federal Technical University, Zurich, on July 30.

C. G. T. Morison, Christ Church, has been elected a member of the Hebdomadal Council.

H. B. Butler, All Souls College, has been appointed the first warden of Nuffield College.

**SHEFFIELD.**—Prof. Irvine Masson, professor of chemistry and head of the Department of Pure Science in the University of Durham, has been appointed vice-chancellor in succession to Dr. A. W. Pickard-Cambridge, who is retiring.

Dr. E. Leighton Yates has been appointed assistant lecturer in physics.

## Societies and Academies

## Dublin

Royal Irish Academy, May 23.

**J. K. CHARLESWORTH:** Some observations on the glacial geology of north-east Ireland. The chief theses of this paper are (1) the drumlins of north-east Ireland were fashioned by ice of the last main glaciation; (2) a Carlingford re-advance against the Mourne and Carlingford Mountains and along Carlingford Lough; (3) the southward retreat of the ice along the Main and Lower Bann and its stagnation along its front and in the Lough Neagh area; (4) an Antrim coastal re-advance that blocked the Bann and Lagan and ponded the drainage of the glens of Antrim in a suite of glacier-lakes.

**H. S. W. MASSEY and R. A. BUCKINGHAM:** Long-range forces between hydrogen molecules. The van der Waals' force between two hydrogen molecules in any fixed orientation is calculated.

## Paris

Academy of Sciences, April 20 (*C.R.*, 206, 1209-1228).

**LUCIEN DANIEL:** Sudden or retarded ripening in the bean.

**ANDRÉ HAARBLEICHER:** The triangles of Poncelet.  
**Mlle. MARGUERITE QUINTIN:** The hydrolysis of solutions of cadmium benzenesulphonate.

**ANDRÉ MERCIER and TORSTEN GUSTAFSON:** The true energy of the electron.

**SERGE NIKITINE:** Contribution to the theory of photodichroism.

**HÉLIOS SCAETTA:** The notion of a cycle in the evolution of tropical soil based on researches in central and in western Africa.

**MME. RITA DUBERTRET, LOUIS DONCIEUX and LOUIS DUBERTRET:** The Nummulitic of Koseir, to the south of Antioch (Syria).

**VLADIMIR FROLOW:** The annual component of the rains in Morocco.

April 25 (*C.R.*, 206, 1229-1272).

**LUCIEN CAYEUX:** The migration of phosphoric acid, following on the decalcification of the phosphatic chalks with *Belemnitella quadrata* in the north of France. The genesis of the phosphatic chalks and of the sands arising from their decalcification results from two totally different phenomena, an incomplete calcification causing an enrichment of the product and an addition of phosphate to the limestone which escaped solution.

**ANDRÉ BLONDEL:** An apparatus for comparing the luminous flux of sources of light.

**GEORGES GIRAUD:** Problems of the Dirichlet type.

**JULES HAAG:** Asymptotic formulæ concerning the oscillations of relaxation.

**HENRI LAGATU and LOUIS MAUME:** Measurements of agricultural biochemistry on the branches of the vine.

**PAUL LÉVY:** The definition of the laws of probability by their projections.

**CHRISTIAN PAUC:** Unification of the generator processes of various contingents and paratingents.

**AZYK GORNY:** The maxima of the moduli of a function and of its derivatives.

**JEAN MARIANI:** A possible interpretation of the solar and terrestrial magnetic fields.