Science News a Century Ago

London and Birmingham Railway

THE most important event in railway history in 1838 was the opening on September 17, 1838, of the whole length of line, 112½ miles long, from London to Birmingham. Parts of the line had been in use for some time, but at 7 a.m. on that day a train left Euston carrying the directors, the principal engineers and a few friends, Robert Stephenson, the engineer-in-chief, being in charge of the locomotive. The new portion opened on September 17 was that between Denbigh Hall and Rugby, on which is situated the Kilsby Tunnel, 2,400 yards long, which had proved most difficult to construct. Describing the opening, a correspondent of *The Times* said, "Taking this line of road as a whole, it is one of the most stupendous undertakings of modern times, and will ultimately lead to results of which it is difficult to foretell the extent."

J. D. Forbes and His Students

FORBES, when professor of natural philosophy at Edinburgh, had among his students during the session 1836–37, "Batten, Cleghorn, J. Anderson, J. Rankine, Harrison—the pleasantest I ever had, much occupied with experiments on radiant heat". He kept in touch with some of these and writing on September 17, 1838, to J. T. Harrison, who became a civil engineer under Brunel, he said: "There has been a considerable break up, of course, among your associates in the Nat. Phil. Class. Still, however, I have kept my eye pretty well upon those with whom you were more particularly associated and the Physico-Mathematical Society prospered last winter remarkably well. . . .

"I shall be glad to hear, though I scarcely expect it, that you have not in the midst of your professional pursuits entirely lost sight of the general scientific principles which form its surest foundation. I do not doubt your good-will or the clearness of your views of what befits a liberal and enlightened prosecution of your profession. That I am sure you will never do; but I rather fear that the very success to which your talents and application so well entitle you, may have already forced you to travel upon the narrow railroad of everyday applications. . . ."

The Duke of Sussex and the Royal Society

IN 1830 Prince Frederick Augustus, Duke of Sussex (1773–1843), had accepted the presidency of the Royal Society. He took office just after Babbage had published his "Reflections on the Decline of Science in England" and Sir James South had written his "Charges against the President and Council of the Royal Society". The Duke was elected by 119 votes as against 111 cast for Sir John Herschel. He held office for eight years, and when he decided to resign he wrote a letter to the Council which was published in the *Athenæum* for September 22, 1838. In the course of this letter he said: "I hope and most fervently pray that the Royal Society may long continue to prosper and flourish, but for this purpose, Gentlemen, you must avoid all matters which are of a tendency to create angry feelings, or heart burnings, on questions of a religious or a political nature. They have nothing to do with science but to create difficulties and impede philosophical researches. From these let me conjure you most cautiously to abstain."

Societies and Academies

Paris

Academy of Sciences (*C.R.*, **207**, 197–264, July 18, 1938).

E. BOREL: The game *pari mutuel*. A study from the point of view of probabilities.

L. CAYEUX: Existence of a coarse calcareous sand at the base of the Senonian phosphatic chalk of Picardy.

J. DE LAPPARENT and R. HOCART: Mineralogical nature of the aluminium hydroxides in the bauxite of French West Africa.

H. DELANGE: Series of polynomials of which the zeros have a regular distribution.

F. GANTMACHER: Canonical representation of isomorphic substitutions of a semi-simple complex Lie group.

A. DENJOY: Convergence of trigonometric series.

L. CHADENSON: A completely relativistic wave mechanics.

L. AUGER: Tuning reed pipes considered as a phenomenon of relaxation.

E. BADAREU and L. CONSTANTINESCO: The explosive potential in benzene vapour.

MME. I. MIHUL and C. MIHUL: Mixed reflection in media with variable optical indexes; application to the ionosphere.

M. DÉRIBÉRÉ: Highly persistent fluorescence in a group of natural limestones.

E. CANALS and P. PEYROT: Raman spectra of crystalline powders: hydrates.

J. THIBAUD and P. COMPARAT: Distribution of resonance levels during the excitation of nitrogen by fast neutrons.

P. AUGER and R. MAZE: Large atmospheric cosmic ray showers. Particles with a maximum range of 15 cm. of lead were detected.

B. PONTECORVO: Order of magnitude of the probabilities of radiative transition in the nucleus.

W. BRONIEWSKI, S. JELNICKI and M. SKWARA: Solidification diagram of copper-aluminium alloys.

G. CHAUDRON, A. PORTEVIN and L. MOREAU: Some consequences of the process of degassing metals at ordinary temperature.

A. CHRÉTIEN and J. BISCH: Active aluminium obtained by igneous electrolysis. A mixture of aluminium bromide and potassium bromide under pressure at 500°, using aluminium as anode and mercury as cathode, yields an active form of aluminium at the cathode.

P. GRAMMATICAKIS: Action of organomagnesium mixtures on the *N*-acyl-*N'*-phenyl-hydrazines.

R. JACQUEMAIN and MLLE. G. DEVILLERS: Some propanetriol aminobenzoic ethers.

L. MARTINEAU and J. WIEMANN: Isolation of an intermediate product in the catalytic isomerization of dipropenylglycol.

P. MARIE and A. MILLARDET: The microscopic fauna of the sediments of the Cape Breton deep.

T. SOLACOLU, D. CONSTANTINESCO and MME. M. CONSTANTINESCO: Anatomical and cytological study [in *Vicia Faba* L.] of the modifications produced and by a mixture of an organo-formative substance and colchicine. While colchicine produces nuclear effects only, a mixture of colchicine and β-indolyl-propionic acid produces tumours showing an upper zone with colchicine effects and a lower zone with exaggerated development of meristem.