

Educational Topics and Events

BIRMINGHAM.—Colonel H. F. Humphreys has been appointed to the recently created chair of dental surgery. He was formerly lecturer in dental anatomy and curator of the Odontological Museum in the University.

CAMBRIDGE.—The following committee has been appointed to advise the Council of the Senate in their choice of a Jacksonian professor of natural philosophy:—the Vice-Chancellor, W. Spens, Prof. Leonard-Jones, H. Thirkill, Prof. G. I. Taylor, Sir Frank Smith, Lord Rutherford, Sir William Pope and Lord Rayleigh.

The following resignations or retirements are announced:—J. T. Saunders, lecturer in zoology; A. A. Miles, demonstrator in pathology; Dr. A. E. Barclay, lecturer in medical radiology and electrology; T. G. Room, lecturer in mathematics; Dr. J. Chadwick, lecturer in physics; Dr. N. Feather, demonstrator in physics; H. N. Green, demonstrator in pathology; R. H. D. Mayall, lecturer in mathematics; Dr. G. F. C. Searle, lecturer and demonstrator in physics; Dr. S. M. Manton, demonstrator in comparative anatomy; E. H. B. Boulton, lecturer in forestry.

R. Passmore has been elected Gwynaeath Pretty student, and Dr. M. E. Adair, of Girton College, John Lucas Walker student.

The John Wimbolt Prize has been awarded to E. D. Ward, of Gonville and Caius College, for a dissertation on "The Thermal Properties of Metals and their Engineering Significance".

At St. John's College, J. S. Marshall, Queen's University, Ontario, has been elected to an exhibition for physics, and G. H. Twigg, University of St. Andrews, to one for chemistry.

At Emmanuel College, the external studentship has been awarded to J. C. Bower (University of Melbourne), for physics.

AN account of the development of the Department of Industrial Administration in the College of Technology, Manchester, by Dr. K. G. Fenelon, has been reprinted from the "Year Book" of the Manchester College of Technology Old Students Association. The Department was founded in 1918 through the co-operation with the governing body of the College of eleven firms each of whom contributed an annual sum of £100, and was developed with the special object of providing facilities for training in the broad underlying principles of management and administration. For the first few years, the Department's activities under the direction of Dr. Stanley Kent were largely devoted to research, but Mr. Dempster Smith who succeeded him as director in 1921 proceeded to develop the teaching side. Evening courses were then established, including those on administration for engineers and administration for chemists, and a full-time two-year day course in industrial administration was introduced, which in 1926 was recognised for the associateship of the College. In 1926 a University post-graduate course in industrial administration was commenced, the first course of its type to be provided in Great Britain, and in the same year the Department was taken over entirely by the College, the original guarantors, with certain changes, continuing to act as an Advisory Committee. Dr. James A. Bowie succeeded Mr.

Dempster Smith as director in 1926 and was followed in turn by Dr. K. G. Fenelon in 1931. Research at present in progress includes scientific management in textile mills, budgetary control, works organisation with special reference to engineering industries and administration and organisation of transport enterprises. Experiments have been made with the 'case method' of instruction, and the full-time courses include weekly study visits to factories, offices and business enterprises.

SCHOOLS of the largest size are to be found, as is well known, in American cities. A recent monograph on the elimination of very small schools (Bull. No. 3, 1934, of the Office of Education) reveals the surprising facts that in the United States more than 7,000 State schools have not more than five pupils each and 1,000 have only one or two. Moreover, in some States the number of such very small schools tends to increase with the substitution of larger farms for smaller and rural depopulation. At a time when school costs are bearing heavily on reduced revenues, the expensiveness of maintaining these diminutive units is directing attention to various schemes for eliminating them. Consolidation into larger units of the ordinary type is among many communities impracticable because transportation facilities cannot be provided. Considerable interest has in recent years been aroused by the use of postal tuition for secondary education, and the question has now been raised whether such correspondence lessons might not with advantage replace many of the excessively small and costly rural schools. Australian and Canadian public school administrators are well satisfied with the results of primary education by correspondence under schemes which have been in operation for some fifteen years in Australia and British Columbia and seven years in Alberta, Saskatchewan and Manitoba. A comprehensive account of the Australian schemes was published in 1931 by Melbourne University Press in association with Messrs. Macmillan and Co., Ltd. The author, Dr. K. S. Cunningham, while admitting that children so taught miss some valuable social experiences, was impressed by the compensating advantages accruing from the intellectual independence fostered in them through having to tackle their work without the present aid of a teacher.

Science News a Century Ago

The Association of German Naturalists

WRITING from Bonn on September 28, 1835, to the *Athenæum* about the German Society "Der Naturforscher und Aerzte" which had just finished its meeting, a correspondent said: "The proceedings of this body must necessarily excite an increasing interest, when its offspring, the British Association, has been growing to its present colossal dimensions, although the subjects and discussions at these Meetings are less comprehensive than at the Association, being confined to Natural History in its widest extent, Anatomy and Chemistry. The results of both have been crowned with a success little expected by those who projected them". Among the most distinguished men of science at Bonn were Von Buch, Elie de Beaumont, Constant Prevost, Alexandre and Adolphe Brongniart, Littrow, Audouin, Ritter, Jussieu, Ampère and Weber, the British men of science including Buckland, Lyell, Horner, Greenough, Gregory and Turner. The first

general meeting was held on September 18; the sectional meetings began on September 19. There were various expeditions, and during the last of these on September 26 Buckland and Von Buch were hurt in a carriage accident.

Writing of the papers in the Sections, the correspondent of the *Athenaeum* said: "The Geological was, as usual, the most popular. The question of elevated craters relating to the much-disputed theory of Von Buch, was discussed at length, and somewhat hotly, the leading speakers being Elie de Beaumont, Lyell, Prevost and Von Buch himself." Very beautiful drawings of Etna and Vesuvius were exhibited and described by Dr. Abich, of Brunswick, while among other topics discussed were Schmerling's discoveries in the bone caverns of Liège, Van Hoff's remarks on the footmarks in sandstones at Hildberghausen, and Buckland's views on the Dinotherium and on the identification of certain beds south of Liège with the Silurian system of Murchison.

"The disposition to conviviality which you noticed in the account of the Dublin Congress was not wanting in Bonn; in this respect the family likeness is most striking: eating and drinking, and giving of toasts, were by no means the least important occupations of the day. . . . The last toast which was given at Bonn, was by Dr. Froriess, of Weimar, 'The British Association and its former president, Dr. Buckland', which was drunk with enthusiasm".

Littrow Observes Halley's Comet

ON October 17, 1835, *The Times* published the following note: "Vienna, Oct. 3. This morning Halley's Comet was perfectly visible to the naked eye as a star of the third magnitude, with scarcely any nebula about it. But seen through the telescope, it looked like an extensive nebula, the largest diameter of which was about 15 minutes, or half the diameter of the sun, with a very bright pretty scintillating nucleus, but still without any considerable tail. . . . As the light of the comet has so much increased within a few days, we may expect that it will be a very fine object in the second half of October. C. L. Littrow."

Baily's "Account of Flamsteed"

IN astronomical circles in 1835, the publication of Baily's "Account of Flamsteed" was regarded with an interest secondary only to that shown in Halley's comet. Admiral W. H. Smyth (1788-1865) was among the early readers of the book, and on October 3, 1835, he wrote from Bedford to Mrs. Somerville: "How remarkable that the month of August this year should rattle Halley's name throughout the globe, in identity with an astonishing scientific triumph, and that in the self-same month the letters of Flamsteed should have appeared! How I wish someone would give us a life of Newton, with all the interesting documents that exist of his labours! Till such appears, Flamsteed's statements, though bearing strong internal evidence of truth, are *ex-parte*, and it is evident his anxiety made him prone to impute motives which he could not prove. The book is painfully interesting, but except in all that relates to the personal character of Flamsteed, I could almost have wished the documents had been destroyed. People of judgment well know that men without faults are monsters, but vulgar minds delight in seeing the standard of human excellence lowered".

Societies and Academies

PARIS

Academy of Sciences, August 5 (*C.R.*, 201, 369-412). LOUIS DE BROGLIE and JEAN LOUIS DESTOUCHES: The theorem of Koenig in wave mechanics. CHARLES NICOLLE and J. LAIGRET: Vaccination against exanthematic typhus by the living typhus bacillus, dried and coated. HENRI LAGATU and LOUIS MAUME: Variations of the physiological ratios in correlation with the disease of 'wild fire' in the tobacco leaf. Chemical differences are disclosed by the analysis of the healthy and diseased leaves, the alteration in the potash to nitrogen ratio being particularly marked. It is not yet clear whether the changes in the ratios are a cause, or a symptom, of the disease. SVEN GULDBERG: The formulae of recurrence of the semi-invariants of Bernoulli's law and of Pascal's law with n variables. CONSTANTIN POPOVICI: The periodic solutions of S. Chapman's equation. G. BOURION: The ultra-convergence of integral series. RENÉ RETEL: Remarks on detonation in Diesel motors. The phenomenon has been studied using the Serruys optical manograph with small inertia, and, from the results, suggestions for avoiding detonation are deduced. It would appear that the presence of light products arising from cracking the fuel is the cause of detonation. MIROSLAV NÉNADOVITCH: The characteristics of certain rigid biplane cells of infinite spread. BENJAMIN GUREWITCH: A method for the study of magneto-strictive vibrations. PIERRE MESNAGE: The molecular emission spectra of some metallic salts. The spectra of the chlorides of iron, chromium and cobalt. ANTONIN ANDANT, PIERRE LAMBERT and JEAN LECOMTE: The diffusion spectra (Raman effect) and infra-red absorption spectra of saturated fatty alcohols and ethylene hydrocarbons. The Raman spectrum gives a characteristic line with the double bond: the infra-red spectrum gives two lines characterising the tertiary alcohol function. The two methods together distinguish between successive homologues and isomers. MAURICE BONZEL: The deformations accompanying the thermal treatments of cold-hardened metals. GEORGES ARDITTI: The autoxidation of normal hexadecane. Study of the oxidation of the liquid hydrocarbon at varying temperatures. For all the temperatures studied, the commencement of oxidation is accompanied by production of carbon monoxide in predominating amounts. More oxygen is used than can be accounted for in the gases produced. HENRI LONGCHAMON: The structure of the Cevennes in the region defined by the Largentière sheet on the scale of 1/80,000. B. CHOUBERT: The Cretaceous formations of the coastal zone of Gabon. JACQUES FLANDRIN: Some features of the middle Eocene Algerian palaeogeography. A. CHARLES HOLLANDE: The structure of the nucleus and its constituents: their homology with the nucleosomes of the Schizophytes (Bacteriaceae and Cyanophyceae). HENRI COLIN and Mlle. ANDRÉE CHAUDIN: The diastatic hydrolysis, *in situ*, of the intercellular cement. EMILE MÈGE: The constitution and descent of the polycarpic strains of *Triticum vulgare*. NICOLAS METALNIKOFF: The bactericidal power of water submitted to the combined action of metallic silver and a continuous electric current. The passage of a continuous electric current, 0.3-4 milliamperes under 1.5-4.5 volts, with a metallic silver anode, confers strong bactericidal