

Educational Topics and Events

EDINBURGH.—At the graduation ceremony on June 28, the honorary degree of LL.D. was conferred on the following: The Right Hon. the Viscount Bledisloe, Governor-General and Commander-in-Chief of New Zealand; Dr. J. L. Garvin, editor of the *Observer*; Dame Maria M. Ogilvie Gordon, geologist and vice-president of the International Council of Women; Prof. J. Graham Kerr, M.P., regius professor of zoology in the University of Glasgow; Prof. John Laird, regius professor of moral philosophy in the University of Aberdeen; Sir George Macdonald, formerly secretary of the Scottish Education Department, archaeologist, numismatist and historian; Dr. J. D. Pollock, Hon. Surgeon-Commander, R.N.V.R.; The Hon. Lord St. Vigeans, formerly chairman of the Scottish Land Court.

The degree of D.Sc. was conferred on the following, for the theses indicated: A. B. D. Cassie ("Infra-Red Absorption Spectra and Molecular Structure of Triatomic Molecules"); D. Clouston ("The Identification of Grasses by Leaf Anatomy"); Dr. J. MacLeod ("The Ecological Complex controlling Activities and Distribution of *Ixodes ricinus*"); Dr. H. W. Melville ("The Kinetics of Gaseous Chain Reactions").

OXFORD.—Sir Charles Sherrington has resigned the Waynflete chair of physiology, which he has held since 1913, as from October 1.

Mr. L. S. Bosanquet has been granted the degree of D.Sc.

At Christ Church, Mr. D. Roaf has been elected to the Duke of Westminster research studentship (that is, fellowship) for work in nuclear physics, and Mr. J. A. Moy Thomas to a lectureship for research in vertebrate palaeontology.

At the Queen's College, Mr. E. W. Yemm has been elected to a junior research fellowship in botany.

DR. JOHN A. WHEELER has been appointed assistant professor of physics in the University of North Carolina, at Chapel Hill. During the past year, Dr. Wheeler has pursued research in nuclear physics at the Institute of Theoretical Physics in Copenhagen.

GERMAN universities are, one gathers, like other cultural institutions in Germany, being remoulded so as to conform with Nazi aims. A letter from the Berlin correspondent of the American Medical Association tells of a new decree releasing the general student body from obligatory attendance on the special political training course prescribed, together with enrolment in a hostel, for members of the Nazi student league. The director of this league has announced that "during the past year and a half the student has been tossed about to such an extent that he has lost most of his faith in attempts to direct the thinking of students. A reawakening of this faith I regard as a necessity . . ." Last winter new regulations made compulsory for all students participation in physical exercises and sports, including *fünfkampf* training and rifle exercise during the first three semesters as a pre-requisite for any degree. Another interesting development is the provision made for permitting twenty of the most talented sons of workmen to attend a university

without presenting a diploma of completion of a secondary school course. For such special entry the Universities of Heidelberg and Königsberg are being considered.

SEX education in schools is discussed in a remarkable paper by Dr. E. P. Phillips which has been published by the Transvaal Education Department in its monthly circular for April. Dr. Phillips writes as a biologist. He begins by emphasising the fact that notwithstanding the fundamental biological discoveries of the past seventy-five years, we still think in terms handed down to us by earlier civilisations, terms involving an often inextricable entanglement of religious ideas with ideas relating to sex. Hence arise divergences between mental outlooks which he classifies as the orthodox religious, the biologist's, and that of the large body of parents who, while not holding very strict religious views, are ignorant of the elements of biology. There should, he holds, be no course of sex education *as a subject*, taught either by the school staff or by visiting doctors; but all children should receive instruction, which should begin before the age of puberty, in some of the more important biological facts about themselves as human beings. It should be inculcated that mankind is faced, like myriads of other species, with the two fundamental problems—the struggle for individual existence and the struggle to maintain the species. Thereafter, the similarity of mankind to the rest of the animal kingdom having been sufficiently demonstrated, the overwhelming importance of the reasoning faculty which differentiates the human from other species should be stressed in connexion with man's social development. To adolescents who have received such a grounding, information about the dangers and implications of sex can be imparted without difficulty. The crux of the scheme for such a broad biological course is the supply of suitable teachers. These should have studied biology, chemistry, physics and geology, should have read widely, and should have tact, sympathy and understanding. The course should not be taught as an examination subject, thereby suppressing the individuality of the teacher. It should be a necessary part of every child's social, moral, ethical and religious training.

Science News a Century Ago

Lyell and Sir John Herschel

LYELL, whose "Principles of Geology" had been published originally in three volumes in 1830, 1832 and 1833 respectively and had been republished in four volumes in 1834, wrote to Sir John Herschel on July 6, 1835: "I heard some months ago from Whewell that you had, in one of your letters to him, expressed much pleasure at some parts of my book, which I think you read when on your way to the Cape. It has been so much altered, enlarged, illustrated, abridged, and I hope improved since the first edition, that I am anxious, if you ever refer to it again, that you should see it in its amended state. Some of my friends have read letters of yours which they have received, to me, and I rejoice that your grand scheme of visiting the Southern Hemisphere has answered so well."

"When at Copenhagen last year Oersted, who was reading your paper on double stars, was talking of

it continually, and trying to make me understand the *poetry* of some speculations, which only amused me, from seeing that it was deep mathematics with which he was delighted, as with a romance."

"Murray has sold 1,750 copies of my book in the last ten months, so that I have the satisfaction of being much read. . . ."

The Science of Education

AN advertisement in *The Times* for July 6, 1835, ran as follows: "A Course of Seven Lectures on the Science of Education will be delivered in Willis's great Rooms, 26 King-street, St. James's, commencing tomorrow the 7th of July at 3 o'clock, and continued on Tuesdays, Thursdays and Saturdays at the same hour, by the Rev. R. J. Bryce, LL.D., Principal of the Belfast Academy. The object of these lectures is to reduce the art of teaching and managing children to scientific principles, derived from the known laws of the human mind; to point out the best methods in each department of education; and to show the means of varying those methods to correspond with the endless varieties which occur in the minds of children. The formation of such a science of education has been spoken of as a great desideratum by the most eminent philosophers of modern times, and has long been anxiously wished for by the most distinguished friends of education. . . . The proceeds of the lectures, after paying necessary expenses, will be placed at the disposal of a committee of the audience, to be by them applied to the promotion of some object connected with the improvement of education."

J. D. Forbes in the Pyrenees

THE travels of Prof. J. D. Forbes began when, as a boy of sixteen years of age, he visited France, Germany and Italy. This journey led to the publication of his first scientific memoir, "Remarks on Mount Vesuvius", which appeared anonymously in the *Edinburgh Journal of Science*. Six years later, in 1832, he first visited Switzerland, from which he hastened home to enter successfully for the chair of natural philosophy at Edinburgh. His favourite subject was heat, and in the summer of 1835 he set out to study the hot springs of the Pyrenean valleys. His letters and journal contain many interesting observations on his travels. On July 7, 1835, he went from Bordeaux to Pau by diligence and on July 9 he records: "A splendid morning. . . . The whole range of the Hautes Pyrenées was now uncovered, and presented as noble and rugged an outline as I ever saw. . . ." He then went to Eaux-Bonnes and to Eaux-Chaudes with its splendid gorge. "If ever there was a valley of disruption," he wrote, "it is this one, though I do not pretend always to decide. This confirms Dr. Daubeny's theory of hot springs, especially as these waters issue just at the junction of the granite and limestone. The limestone rises always to the granite, more as it approaches it, and at last is elevated in horizontal strata on the top of it—at least so far as I can judge from a very imperfect examination. What confirms the view of the granite being the upheaving agent is that the valley of disruption is perpendicular in direction to the strata (Hopkins' theory). It is remarkable that there are signs of water wearing (obviously not weathering) on the rocks at a great height above the torrent."

Societies and Academies

LONDON

Royal Society, June 27. W. A. BONE, R. P. FRASER, and W. H. WHEELER: A photographic investigation of flame movement in gaseous explosions. A new view of the detonation wave in gaseous explosions is advanced. It can no longer be regarded as simply a homogeneous shock wave in which an abrupt change in pressure in the vicinity of the wave-front is maintained by the adiabatic combustion of the explosive medium through which it is propagated, but it must now be viewed as a more or less stable association, or coalescence, of two separate and separable components, namely, of an intensively radiating flame-front, with an invisible shock wave immediately ahead of it. According to the new view, detonation in an explosive gaseous medium is the propagation through it, as a wave, of a condition of intensive combustion, initiated and maintained in a shock wave by radiation from an associated flame-front; and spin ensues whenever the conditions are such that the radiation from an attenuated flame-front causes a localised intensive excitation of molecules in the shock wave just ahead of it. The experimental part of the work has been mainly concerned with detonations in a moist $2\text{CO} + \text{O}_2$ medium, which has proved to be specially adapted to the elucidation of the dual character of the phenomenon. O. H. LATTER and H. ELTRINGHAM: The epigamic behaviour of *Euplœa (crastia) core asela*, Moore (Lepidoptera, Danainæ) with a description of the structure of the scent organs. Observations in the field show that the male butterfly diffuses, from brushes exerted from the abdomen, a scent which attracts females from a distance. While male scent organs of great complexity are found in many insects, no evidence has previously been obtained of the distant action of such organs, termed here 'telegamic'. B. F. J. SCHONLAND, D. J. MALAN, and H. COLLENS: Progressive lightning (2). A general account, based on the study of 95 flashes photographed with the Boys and other cameras, is given of the mode of development of the lightning discharge. It is shown that the leader-return stroke sequence is present in almost all the cases examined. Leaders to first strokes are stepped, those to subsequent strokes generally dart-like. In certain cases of very slow dart leaders, these change to the stepped form at their lower ends. Slower leader velocities and higher intensities of return strokes are associated with longer time-intervals between strokes and their predecessors; hence the degree of pre-existing ionisation in the channel governs the velocity of the dart-leader. The downward-branching of lightning and its characteristic zig-zag form arise during the stepped leader process before the first return stroke.

PARIS

Academy of Sciences, May 20 (*C.R.*, 200, 1697-1804). CHARLES ACHARD and AUGUSTIN BOUTARIC: The physicochemical study of the changes undergone by the blood serum under the influence of heat. The diluted serum is treated with charcoal, and the quantity of the latter determined which completely removes the colloidal substances, use being made of the surface tension. Data are given for results obtained by heating for various times at temperatures between 55°C . and 62°C . PIERRE WEISS: The