

the others more readily by neutrons which have been delayed by passage through thick layers of water, paraffin and other hydrides.

The mechanism of the transformations is discussed at some length. Bombardment of an atom by a neutron will produce an element of lower atomic number whenever an  $\alpha$ -particle or a proton is eliminated, but this effect will be counteracted or even reversed when the unstable product emits sufficient  $\beta$ -radiation. On the other hand, an initial decrease in atomic number may be avoided, either by the expulsion of a second *neutron* along with the bombarding neutron, or by the mere absorption of the latter without nuclear disintegration. These effects are produced by 'fast' and 'slow' neutrons respectively, and in both cases the initial products become stabilised by the emission of  $\beta$ -rays, with consequent increase in atomic number.

A plate showing three photographic exposures by the Wilson method in a magnetic field is given as evidence of the  $\beta$ -radiation of trans-uranic elements.

### Educational Topics and Events

**BELFAST.**—The Senate has decided to confer the honorary degree of D.Sc. on Prof. T. H. Milroy, emeritus professor of physiology, and Prof. W. B. Morton, emeritus professor of physics.

**CAMBRIDGE.**—It is proposed by the Buildings Syndicate that a site for a new School of Anatomy be assigned on the Downing Street site in the court surrounded by the Schools of Agriculture, Pathology and Biochemistry and the Molteno Institute.

D. R. Pye, of Trinity College, has been approved for the degree of Sc.D., and Miss M. J. Stephenson, of Newnham College, for the title of the degree of Sc.D.

Dr. E. A. Moelwyn-Hughes, of Corpus Christi College, has been admitted by incorporation to the degree of Ph.D.

Mr. F. T. Brookes, fellow of Emmanuel College and University reader in mycology, has been appointed to the professorship of botany vacant by the resignation of Prof. A. C. Seward.

The Cambridge Philosophical Society is holding an exhibition of historic scientific apparatus in the Old Schools on June 8–23. The exhibition will be opened by Lord Rutherford in the Regent House of the Old Schools on June 8 at 9 p.m.

**LIVERPOOL.**—The University is to confer the honorary degree of Doctor of Laws upon Mr. Harold Cohen in special recognition of his munificent gift of £100,000 for the erection of a new Library, and for his previous gifts to the endowment fund of the library, and to the Students' Union.

**LONDON.**—The University's great scheme for building on its Bloomsbury site to the north of the British Museum is in process of realisation. The 'senate-house block', comprising accommodation for the meetings of the Court, the Senate and its various committees, a conference room, small hall and the administrative offices, is, says the Principal's Report for 1935–36, nearing completion, and it is hoped that the first part of the move from the Imperial Institute building in South Kensington will be achieved during

the coming long vacation. So, exactly a hundred years after its foundation by Royal Charter in 1836, the University will occupy a home of its own. From its foundation until 1900, the functions of the University were almost entirely restricted to those of examination, and examination statistics still figure prominently in its annual reports. In the past year, candidates numbered 44,274, as compared with 42,822 in 1934 and 16,906 in 1919. The number of students reading in colleges of, or affiliated to, the University was 13,364. External students registered as preparing for the University's external examinations exceeded 12,000, of whom 6,000 were preparing for various intermediate examinations and 4,000 for degree examinations. Among the numerous benefactions mentioned in the report, a significant item is Sir Montague Burton's gift of £500 a year for the partial endowment of the chair of international relations at the London School of Economics. Seeing that a large proportion of the students in attendance at the School are residents of countries outside the British Isles (37 per cent of the 911 full-time students in 1934–35 were from abroad) it is obviously desirable to maintain and, if possible, enhance the prestige of this chair.

THE Trustees of the Garton Foundation have awarded the Garton Foundation studentship in the social sciences for 1936 to Mr. Harold Barger of the University of London (University College). The studentship, founded in 1928 by the late Sir Richard Garton, is intended to assist students of exceptional capacity to devote themselves for a year or more to the study of social or economic problems of fundamental importance. It is open to British subjects, and is of the annual value of £400 and is offered every second year. Mr. Barger proposes to study the economic fluctuations in the United States since the Great War.

THE Committee of Award of the Commonwealth Fund fellowships has made the following appointments, among others, to fellowships tenable by British graduates in American universities for the two years beginning September 1936. Gordon Bowen (Liverpool and Glasgow), to the University of California, in geography; P. M. Butler (Cambridge), to Columbia University, in zoology; H. R. X. D'Aeth (Cambridge), to Harvard University, in botany; J. C. Dykes (Cambridge), to the California Institute of Technology, in engineering; R. G. Flood (Manchester), to the University of Chicago, in economics; Dr. G. C. Hampson (Oxford), to the California Institute of Technology, in chemistry; W. M. Honeyman (St. Andrews), to Columbia University, in medicine; J. C. Hornel (Edinburgh), to the University of California, in chemistry; Dr. M. S. Jones (Edinburgh), to the University of Pennsylvania, in medicine; Dr. W. B. Mann (Imperial College of Science and Technology, London), to the University of California, in physics; F. H. Merrill (Liverpool), to the Massachusetts Institute of Technology, in engineering; A. L. Percival (Cambridge), to the Massachusetts Institute of Technology, in engineering; Dr. Donald Purdie (Cambridge), to Stanford University, in chemistry; H. D. Springall (Oxford), to the California Institute of Technology, in chemistry; Dr. E. G. Taylor (University College, Swansea), to Brown University, in chemistry. The following have been appointed to fellowships tenable by candidates from the British Dominions: I. P.

Norval (South Africa and Oxford), to the Rockefeller Institute, Princeton, in botany; W. E. van Heyningen (Stellenbosch and Cambridge), to Harvard University, in biochemistry. The following have been appointed to fellowships tenable by candidates holding appointments in Government service overseas: C. R. Barnicoat (New Zealand), of the Department of Scientific and Industrial Research, Government of New Zealand, to the University of Minnesota, in dairy research; R. M. du Toit (Pretoria), of the Department of Agriculture, Government of South Africa, to the University of Minnesota, in veterinary science; R. G. Simmers (New Zealand), of the Department of Scientific and Industrial Research, Government of New Zealand, to the Massachusetts Institute of Technology, in meteorology; Dr. E. J. Underwood (Western Australia and Cambridge), of the Department of Agriculture, Government of Western Australia, to the University of Wisconsin, in agriculture.

## Science News a Century Ago

The University of London

*The Times* of June 6, 1836, said, in the form of a quotation from the *Observer*: "As there seems to be some doubt respecting the progress of the arrangements for the constitution of the new Metropolitan University, we have much pleasure in announcing that the charter is already in a state of forwardness, and will probably be mature for promulgation in about a fortnight. In addition to Professor Airy, the Rev. Mr. Thirlwall and Mr. Senior, who, we were enabled to state some time since, would be members of the board of examiners, the public will be gratified to learn that the following distinguished persons are also to be among the number:—Mr. Lubbock, Vice-President of the Royal Society; Mr. Sheepshanks, of Trinity College, Cambridge; Dr. Arnold; and Dr. Dalton, the eminent chymist, of Manchester."

Lyell and Sir John Herschel

ON June 7, 1836, Lyell wrote from 16 Hart Street, Bloomsbury, to Herschel, at the Cape, "A few days ago I sent to Captain Beaufort a long letter which I had written to you, in which I hoped to enclose some letters of introduction to persons at Rio, as you wished. I now enclose them, together with the abstract of Babbage's paper to which I alluded. . . . Yesterday I sat next Babbage at Miss Rogers' at dinner. . . . Mr. Rogers, the poet, was talking of your astronomy which he had read, as well as the introduction to 'Natural Philosophy', and with both of which he had been much delighted; and among other things, with the manner in which you had alluded to certain papers of Dr. Young's on light and colour, which Brougham has so contemptuously and unmercifully cut up in the 'Edinburgh Review'. . . . I think it was Sydney Smith who said of Brougham that he had made two great discoveries in the 'Edinburgh Review'—the first was that Byron was no poet, the second that Young was no philosopher."

Brain of the Negro

In a paper read before the Royal Society on June 9, 1836, Dr. Frederick Tiedemann, professor of anatomy and physiology in the University of

Heidelberg and foreign member of the Royal Society, presented a paper on this subject, which he said was one of great importance in the natural history, anatomy and physiology of man, as well as interesting in a political and legislative aspect. His extensive researches had led him to the following conclusions: (1) The brain of a Negro is on the whole quite as large as that of the European and other human races. (2) The nerves of the Negro, relatively to the size of the brain, are not thicker than those of Europeans, as Soemmering and his followers had said. (3) The outward form of the spinal end, medulla oblongata, cerebellum and cerebrum of the Negro show no important differences from that of the European. (4) Nor does the inward structure, order of the cortical and medullary substance, nor the inward organisation of the interior of the Negro brain show any difference from that of the European. (5) The Negro brain does not resemble that of the orang-utan more than the European brain, except in the more symmetrical distribution of the gyri and sulci. In conclusion, Prof. Tiedemann maintained that neither anatomy nor physiology justified our placing the Negro beneath the European in a moral or intellectual point of view. (*Phil. Trans.*, 497; 1836.)

Humboldt and Terrestrial Magnetism

THE foremost contributors to the knowledge of terrestrial magnetism in the early part of the nineteenth century were Hansteen, Gauss and Alexander von Humboldt. Born in 1769, Humboldt made his celebrated journey in Southern and Central America during 1799–1804, and from 1808 until 1826 resided mainly in Paris where he was the friend of Arago. Returning to Germany, in conjunction with Gauss, he organised the German Magnetic Union and vigorously impressed the importance of magnetic expeditions on both the Russian and British Governments. His letter on a systematic course of observations in various parts of the world was addressed to the Duke of Sussex, then president of the Royal Society. This was referred to Christie and Airy, who, on June 9, 1836, reported favourably upon it, strongly recommending the adoption of the scheme.

## Societies and Academies

EDINBURGH

Royal Society, May 4, 1936. STEFAN JELLINEK: The theory of electrical traces (address). The external or superficial effects upon objects struck by lightning have long been known. These effects (or 'traces') are shown to be separable into three distinct geometrical types—the straight line, the circular and the spiral. In addition to the thermal and chemical action, it has been demonstrated that there is also a mechanical action.

PARIS

Academy of Sciences, April 27 (*C.R.*, 202, 1389–1468). DIMITRI RIABOUCHINSKY: The régime of velocities almost equal to the local velocity of sound. JEAN ANDRÉ VILLE: Indifferent frequencies. LÉON POMEY: The determination and the harmonic