small committee of scientific workers and horticulturists is being set up, with headquarters at Kew, to discuss the practical value of the results obtained. It is hoped that the committee may serve as a medium for the exchange of ideas, and also as a body which may be consulted by those who are working at isolated centres and are not in a position to decide in what directions their researches might most usefully be carried out. If at any time it is felt that further open meetings could usefully be held, the committee will decide where and when these might take place.

University Events

CAMBRIDGE.—The title of Stokes lecturer in mathematics has been conferred on Dr. S. Goldstein.

The Vice-Chancellor gives notice that the Cavendish professorship of experimental physics is vacant by the death of Lord Rutherford. A meeting of the electors will be held on February 11. If a proposal which is at present before the University is approved, the stipend of the professor will be £1,400 a year or while the professor holds a fellowship of a College with dividend £1,200, in addition to a non-pensionable payment of £200 a year for administration. Candidates for the professorship are requested to communicate with the Vice-Chancellor, and to send him on or before February 1 ten copies of any statement or testimonial which they desire to submit to the electors. If testimonials and references are sent they should not, taken together, exceed four in number.

The Adam Smith Prize is awarded to S. R. Dennison of Trinity College.

OXFORD.—S. J. Wright, for some years assistant-director and recently acting-director of the Institute for Research in Agricultural Engineering, has been appointed director.

Dr. J. R. Raeburn has been appointed a research officer under the Committee for Rural Economy.

A. G. Ogston has been elected to a fellowship at Balliol College for work in the biological sciences.

Dr. A. G. Gibson, Nuffield reader in morbid anatomy, has been elected to a professorial fellowship at Merton College.

Viscount Cecil of Chelwood has been appointed Romanes Lecturer for 1938.

The numbers of those reading the various main subjects of study in the academic year 1936–37 have recently been compiled. The largest science 'schools' are chemistry (207), physiology (194) and mathematics (143). Then come the new school of geography (100), agriculture and forestry (76), physics (59), zoology (40), engineering, botany and geology. About nine per cent of those reading these subjects are women. These numbers are greater than the corresponding numbers of the last survey. They are still small, however, compared with those of many other subjects. History (931), 'Greats', philosophy, politics and economics, and modern languages have each more than twice as many students as chemistry. Then come, in descending order of numbers, law (405), English, theology, music and Oriental studies.

SHEFFIELD.—The following appointments have recently been made : R. W. John, to be research assistant to the Department of Pathology ; Douglas Harrison, to be assistant lecturer in electrical engineering ; Donald Havenhand, to be assistant lecturer in metallurgy.

Science News a Century Ago

An Ascent of the Peak of Demawund

AT a meeting of the Royal Geographical Society held on January 8, 1838, extracts were read from three communications. One of these was an account of an ascent of the peak of Demawund in September 1837 by Taylor Thomson, the paper being presented by W. F. Ainsworth (1807–96), who had been surgeon and geologist to the Euphrates expedition of Colonel Chesney. The mountain, it was stated, was about 40 miles east-north-east of Teheran and previously there had been no account of its ascent by a European or any measurement of its height. Thomson left Teheran on September 4, and after obtaining guides at a village, ascended to the summit on September 9 and spent the night there in a cave which was heated to upwards of 76° F. by the sulphurous vapour which issued from the rocks. The geological formation of the mountain, from Gernah upwards for about 1,000 feet seemed, said Thomson, to be a bed of sandstone of the coal formation, with one seam of coal ; above this limestone occurred with a thickness of about 1,200 feet, then came greenstone coloured with iron to within 100 ft. of the summit, which was a deposit of pure sulphur. "The geological results of this expedition," said Ainsworth, "possess great interest by establishing the existence of a pseudo-volcano in these central districts of Western Asia, and ally themselves with the observations which Baron Humboldt has made upon the evidences of volcanic action, which he has traced everywhere on the great continent of Asia. It is a remarkable fact that throughout those districts of Taurus, Amanus, Kúrdistán and the Persian Apennines, in which I have travelled, I have never yet met with rocks of the secondary series. The absence of every member between the chalk and the primary formations is one of the most remarkable features in the geology of Western Asia."

Fossil Discoveries in France

ON January 13, 1838, the *Athenæum* again directed attention to the recent discoveries of fossils in a French mine, remarking that "Further inspection increases the importance of the discoveries of M. Lartet and others . . . and fresh arrivals from him at the Academy of Sciences in Paris, produce new wonders. They combine the remains of animals, which, in all probability, no longer exist in nature, with some which do not appear to differ from those actually in being : the mine is still far from being exhausted, and a more favourable opportunity for the observations of geologists never before presented itself. The bones of the rhinoceros most abound ; after these come those of deer, with their horns, and if an estimation may be formed by their size, the remains of a small and elegant species of ass or horse must have been deposited. New fragments of *macrotherium gigans* have come to light, which show that its claws bore a strong analogy to those of the Orycteropus. The bears must have been totally different from any yet discovered ; and those bones which belong to an animal called Amphicyon, by M. Lartet, show a strong analogy between it and the dog".

Samuel Woodward, 1790–1838

ON January 14, 1838, Samuel Woodward, the Norwich geologist and antiquary, died at the age of forty-seven years. Born in Norwich on October 2,

1790, he was the only son of a bombasine weaver. His father died in 1795, and at the age of seven years he was placed with a shawl weaver, but from the age of fourteen for ten years he worked with a manufacturer of bombasines and camelots. His taste for reading was stimulated by his employer, and he became a teacher in both evening and Sunday schools. In 1814 he obtained a clerk's place in the Norwich Union Fire Office, and in 1820 a similar post in Gurney's (now Barclay's) Bank at Norwich and this he retained for the remainder of his life. Devoting his leizure to the study of the history of his native county, he wrote on its churches, its antiquities and its geology. In 1830 he published "A Synoptical Table of British Organic Remains" in which for the first time all the known British fossils were enumerated, and in 1833 his work "An Outline of the Geology of Norfolk". One of his sons, Bernard Bolingbroke Woodward (1816–69), became librarian in ordinary to Queen Victoria at Windsor Castle, and another, Samuel Pickworth Woodward (1821–65), in 1845 became the first professor of geology and natural history at the Royal Agricultural College, Cirencester, and from 1848 until his death was an assistant in the department of geology and mineralogy of the British Museum.

Societies and Academies

Edinburgh

Royal Society of Edinburgh, December 6.

H. J. BHABHA : Production of electron showers by cosmic rays. Blackett and Occhialini showed in 1932 that cosmic rays produce showers. The quantum theory is capable of explaining these showers. Very high energy electrons lose practically their whole energy by emitting a few high energy quanta. Each high energy quantum is chiefly absorbed by the creation of a pair of positive and negative electrons. When, therefore, a very high energy electron passes through matter, it emits a few hard quanta, each of which in turn produces an electron pair, which again emit quanta and so on. Thus, if the initial energy be high enough, many hundred particles may be created, forming a shower.

R. S. BARCLAY and W. O. KERMACK : The decline of the birth-rate : regularities revealed by an analysis of the rates observed in certain European countries. An analysis of the birth-rates in Sweden, Denmark and Finland has been made by a method analogous to that previously employed by Kermack, McKendrick and McKinley in connexion with the death-rates of Scotland, England and Wales, and Sweden. As in the latter case, regularities of a somewhat simple type are revealed. The results are applied in the calculation of specific fertility rates for England and Wales for the past six decades.

J. SMALL : Quantitative evolution (4, 5 and 6). (4) The effect (K) of an organismal factor depresses the apparent Dp-ages of Compositæ in direct proportion to time. This rectilinearity indicates that species in Compositæ have a limited life-time, and that genera are similar. (5) The K values give 'free' Dp-ages which do not depart significantly from a rectilinear series in time. (6) The Dp-age unit is 2 million years for angiosperms. Their normal species life-time is 12 million years, with generic life-times at 24 million years. Consequential data are given for residual doubling in numbers, also present rates for origins and extinctions. It is concluded that the presence or absence of eliminative natural selection is a matter for statistical inquiry.

T. M. MACROBERT : Induction proofs of the relations between certain asymptotic expansions and corresponding generalized hypergeometric functions. The formulæ are established for simple cases by contour integration, and are then deduced for the general cases by induction. They are then employed to evaluate integrals involving Legendre functions and hypergeometric functions.

Paris

CLAUDE CHABAUTY : The units of a body of algebraical numbers which are submitted to algebraic conditions.

PAUL VINCENSINI : A characteristic property of conformal transformations of the plane.

FERNAND AIMOND : Some properties of surfaces deduced from the conditions of equilibrium of convex surfaces.

MARCEL DECUYPER : Series of Laplace any four consecutive radii of which form a quadrilateral.

A. P. DIETZMANN : Infinite groups.

ARMAND RAUCH : Certain integral functions of the order $\rho < 1/2$.

ALEXANDRE FAVRE : The study of the Toussaint-Carafoli hydrodynamic tunnel with the view of obtaining bidimensional movements. Flow with circulation.

ROBERT SILBER : The influence of the blast from the propelling screw on the carrying power of an aeroplane, and the method to be followed for utilizing the results of tests of carrying power of a wing submitted to an air current from a screw.

PAUL MULLER : A new double image astronomical micrometer. A modification of the method used in the Rochon telescope. The instrument has been in use in the 16 cm. equatorial of the Strasbourg Observatory since January 1937, and has proved satisfactory.

JEAN MERCIER and JEAN DUBOIS : Contribution to the study of solid friction. Preliminary studies on the variation of the coefficient of friction caused by changes in the pressure and the velocity.

P. L. VIOLLE : Concerning Dewar flasks. The earliest description of a high vacuum and silvered surface in a glass flask for the purpose of reducing radiation appears to be that of J. Violle in 1882.

HENRI MOREAU : A preliminary study of precision mercury thermometers in fused quartz.

LEONID GABRILOVITCH : Sorting waves by periodically variable resistance systems.

WILFRIED HELLER : The influence of the size of colloidal particles on their optical anisotropy.

MAURICE COTTE : The orthogonal systems of electronic optics and their application to spectroscopy.

PIERRE BARCHEWITZ : The (CH) absorption bands of saturated and ethylene hydrocarbons between 6000 and 9500 A.

MAURICE LAMBREY : New observations on the disengagement of nitric oxide by various nitrated products at a low temperature. From a study of the gases evolved from crystallized tetranitropenta-erythrite, it would appear that the true decomposition velocity is not measurable below a temperature