Current Topics and Events.

THE list of New Year honours includes the following names of men known by their scientific work or associations: *Baronet:* Sir Donald Macalister, K.C.B., M.D., F.R.C.P., F.R.S.E., president of the General Medical Council. *Knights:* Dr. Byrom Bramwell, for services to medicine; Dr. H. L. Ferguson, Dean of the Faculty of Medicine, University of Otago, Dunedin, New Zealand; Mr. T. H. Mottram, H.M. Chief Inspector of Mines, Mines Department, Board of Trade; and Mr. H. Murray, Assistant Forestry Commissioner of England and Wales. *K.C.B.* (*Military Div.*): Sir William B. Leishman, Director-General, Army Medical Service. *C.B.* (*Military Div.*): Maj.-Gen. D. J. Collins, Deputy Director of Medical Services, Southern Command, East Indies. *K.C.M.G.*: Prof. W. R. Dunstan, for services as Director of the Imperial Institute.

ON November 6 Sir Oliver Lodge gave a presidential address to the Röntgen Society, entitled "X-rays and the Atom." In it he dealt first with the way in which X-rays had been employed by various experimenters in elucidating the structure of the atom. He also described the X-ray spectrometer, whereby the wave-length of any given set of X-rays can be quickly determined; thus furnishing a measure of their penetrating power, and the characteristics which make them serviceable for any particular kind of surgical or medical examination. These portions of the address will be published in the Journal of the Röntgen Society. On account of the length of the address, certain portions had to be omitted. Some of these portions were of an expository character, and two sections, appropriate to the pages of NATURE, are published elsewhere in this issue. The concluding portions were of a more speculative character, and endeavoured to suggest hydrodynamical inquiry into the exceptional or peculiar behaviour of electrons inside the atom, so as to reconcile it with dynamical or electromagnetic theory.

WE are very glad to learn that, through the generous intervention of a guarantor who prefers to remain anonymous, and an educational trust with which he is associated, the publication of the accurate and interesting monthly periodical of progressive knowledge, *Discovery*, is to be continued. The journal has maintained a high standard throughout its existence, and its contributors have included men of distinction in many departments of learning. The articles and illustrations have represented popular science—natural and humane—at its best, and have always been attractive without being tawdry and superficial. Every endeavour to enlighten the community in this way, and thereby to stimulate interest in human achievement in intellectual fields, merits all the encouragement that can be afforded it. We welcome, therefore, the announcement that the beacon of *Discovery* is to continue to shine for the pleasure and guidance of all who care to profit by its light.

IN an article in our issue of December 1, p. 781, reference was made to the future of the Industrial Research Associations. In the September-October issue of the *Scientific Worker* the belief is expressed that further public funds will be available for their preservation if the industries themselves will show by their financial support that they believe them to be vital for progress in the distant as well as the near future. So far, the work of these associations has been wrapped in mystery and the public has known too little of their doings. An estimate carefully made of the increase in national wealth due directly or indirectly to research financed out of public funds would be most valuable at the present juncture. The United States estimates that the 400,000*l.* spent during the past ten years on the Forest Products Laboratory at Madison saves American industries 6 million pounds sterling annually. In order that the best methods of administration and control of Research Associations may be adequately discussed, the journal invites the business firms constituting, and the scientific staff employed by the Associations, to express their candid opinions on the subject.

As a result of the success of the "Scientific Novelties Exhibition" held a year ago in support of King Edward's Hospital Fund for London, King's College, Strand, is once more housing a similar exhibition open December 29–January 9. The exhibits are supplied by the colleges, hospitals, and associated institutions of the University of London. The college is lent by the Delegacy, and the gas and electricity are given by the respective supply companies. With this combination the organisers of the enterprise hope to raise funds for the hospitals. The exhibition is designed to bring before the man in the street (and his children) the wonder aspect of science, and to present interesting and amusing applications of scientific principles. Though most of the demonstrations and exhibits are scarcely novelties, they appear to delight the crowd of visitors which daily passes through the building between the hours of 2 and 9 P.M., and no doubt many of the devices will find a place in college and school conversaziones of the future. The exhibits include many old favourites, such as large Wimshurst machines with accessories, stroboscopes old and new, discharge through gases and X-rays, howling tubes and Chladni's figures, polarisation and ultra-violet light. In one very amusing exhibit a professor of engineering surpasses his previous efforts with high tension discharge by the production of thunder by the suitable use of students and stage properties. As an alternative to such a display, a room near by tempts those with a taste for anthropology, with skulls, casts of skulls, etc. But this is a mere outline of the contents of the rooms open to the public. Another feature of the exhibition is the very full lecture list. On most days four or six lectures are given, on a large variety of subjects, mostly by people whose names would normally draw crowds to a lecture. Without a doubt one may say that, if the public is made aware of the exhibition, by suitable advertisement, the organisers will not be

disappointed in the amount of money which they will hand over to the hospital fund at the end of the ten days.

PROFS. BOHR (Copenhagen), Einstein (Berlin), and von Kries (Freiburg) have been elected foreign members of the Göttingen Academy of Sciences.

DR. W. BOTTING HEMSLEY, Keeper of the Herbarium and Library, Royal Botanic Gardens, Kew, from 1899 to 1908, well known by his work on insular floras and on the floras of China and of Central America, attained his eightieth birthday on December 29. He was elected a fellow of the Royal Society in 1889.

THE following free public Gresham Lectures are announced for delivery at Gresham College, Basinghall Street, E.C.2, at 6 o'clock each day: Geometry, by W. H. Wagstaff, on January 15, 16, 17, and 18; Astronomy, by A. R. Hinks, on January 22, 23, 24, and 25; Physic, by Sir Robert Armstrong-Jones, on January 29, 30, and 31, and February 1.

DR. PAUL VON GROTH, the distinguished professor of mineralogy in the University of Munich, is, according to the *Chemiker Zeitung*, to retire on April 1, 1924. It will be remembered that a special number of the *Zeitschrift für Kristallographie*, which was referred to in NATURE of October 6, p. 519, was issued to commemorate the eightieth birthday, on June 23, of its founder and first editor, Prof. von Groth, who has devoted his long life to the study of crystallography.

TO mark the seventy-fifth anniversary of the American Association for the Advancement of Science, it is announced in *Science* that a member of the Association has given the sum of one thousand dollars to be awarded as a prize to the author of a paper containing a notable contribution to the advancement of science, presented at the Cincinnati meeting either before the Association or before one of the affiliated societies. The award will be made by a committee to be appointed by the council of the Association.

THE Council of the Institution of Automobile Engineers has established a medal to be awarded to a member of any grade for any paper or similar service which may be considered likely to have special influence on the advancement of automobile engineering. The medal, which is of bronze, bears on its obverse side a replica of the head of Dr. F. W. Lanchester as symbolical of progress in the industry. The Council has decided to award the first medal to Dr. Lanchester for his contributions to scientific knowledge.

THE Council of the Royal Anthropological Institute has resolved to offer medals, not more than two in number in any one year, as a reward for specially meritorious anthropological work in the field. All British subjects and anthropologists of other nationalities who may be fellows of the Institute will be eligible for the award. The medals will be known as the Rivers Memorial medals in memory of the late Dr. W. H. R. Rivers, who was president of the Institute at the time of his death.

REFERRING to the article "Science in Agriculture," based on the Rothamsted Experimental Station Report for 1921–22, in NATURE, December 15, p. 881, Dr. B. A. Keen, Assistant Director of the Station, informs us that the report is not an annual one, but covers the two years 1921 and 1922; its "somewhat belated" appearance is due to the extra work of dealing with a double set of figures. The arrears of work arising out of war and post-war conditions have now been dealt with, and it is hoped that it will be possible to recommence the issue of annual reports.

THERE has been issued from the British Museum (Natural History) a calendar for 1924, attractively decorated by a brilliant coloured representation of a Morpho butterfly. On the mount are stated the hours of admission to the Museum and of the official tours, the publications issued by the Trustees, a few of the more notable recent additions to the collections, a list of the Museum staff, and the postage rates. We should also like to direct attention to the list (N.H.M. Form 170) of picture cards issued by the Museum, many of which could be employed effectively by teachers.

IN connexion with the twelfth annual conference of Educational Associations now in progress, the Selborne Society has arranged a demonstration of the kinematograph in education at the Stoll Picture Theatre, Kingsway (which Sir Oswald Stoll has kindly lent for the purpose), on Thursday, January 10, 1924, at 10.30 A.M. Illustrations will be given of the teaching of physical geography, history, and natural history with the aid of films. Admission will be by tickets only, which will be sent on request by the honorary secretary of the Selborne Society, Mr. Wilfred Mark Webb, The Hermitage, Hanwell, W.7.

DR. F. M. BECKET, of the National Carbide and Carbon Co., N.Y., has been awarded the Perkin medal, and, according to *Chemistry and Industry* for Nov. 30, the presentation is to take place at the meeting of the American Section of the Society of Chemical Industry on January 11. Dr. Becket's most noteworthy achievement was probably the discovery and development of the process for reducing ores by silicon. In the case of the more valuable metals, this process made possible the economic production of a superior quality of alloy of low carbon content which is admirably suited to the manufacture of certain tool-steels. Dr. Becket has also carried out valuable work in electrochemical and chemical engineering fields.

THE programme of Friday evening discourses before Easter at the Royal Institution covers a wide range of subjects and includes the names of many distinguished scientific workers. The first discourse of the session, on January 18, by Prof. Henry E. Armstrong, will be on the scientific work of Sir James Dewar, Fullerian professor of chemistry (1877–1923). Among the other lecturers and their subjects are the following: Sir William Bragg (recent research on crystalline structure), Sir Arthur Evans (recent lights on the Minoan art of Crete), Dr. J. H. Jeans (origin of the solar system), Prof. G. Elliot Smith (the

human brain), Dr. Walter Rosenhain (inner structure of alloys), Sir Frederick Keeble (the plant commonwealth and its government), Prof. Hugh Maclean (insulin), Sir Ernest Rutherford (the nucleus of the atom), Prof. Jocelyn Thorpe (colours, stains, and dyes). The complete programme of discourses and lectures can be obtained from the assistant-secretary, Royal Institution of Great Britain, 21 Albemarle Street, W.1.

THE following awards have been made for papers read before or published by the Society of Engineers (Inc.) during 1923: President's gold medal to Mr. J. W. Gordon for his paper on "Railway Surveying by Photography"; Bessemer premium to Mr. Mauclere for his paper on "The Pneumatic Handling of Petrol and other Inflammable Liquids"; Nursey premium to Mr. A. Hiley for his paper on "The Impact of Imperfectly Elastic Bodies, with particular reference to the Effect of the Hammer Blow in Pile-driving"; Bernays premium to Mr. A. Ferguson for his paper on "A new entirely automatic Machine for the Mass Production of Glass Bottles"; Society premium to Mr. A. S. E. Ackermann for his paper on "The Physical Properties of Clay (fifth paper) and the Dynamics of Pile-driving"; Clarke premium to Mr. R. C. Hill for his paper on "Work Beneath the Waves" read before the Gloucestershire Engineering Society, associated with the Society of Engineers; and Geen premium to Mr. H. F. Jones for his paper on "Boilers" read before the Crystal Palace Engineering Society, associated with the Society of Engineers.

THE fourth report of the National Institute of Agricultural Botany, for 1922–23, shows steady progress since the founding of the station. The first series of field trials has been completed and a new series begun with improved methods in the light of the experience gained. The volume and importance of the results of the scientific and practical work has justified the establishment of an Institute Journal, of which the first number has already appeared. A decision has had to be made as to the relative importance of trial and distribution of seed in the work of the station, and it is proposed to concentrate for the next few years on the elaboration and improvement of methods of trial, in order that eventually it may be possible to issue authoritative reports on the yield and quality of different forms of farm plants and their suitability for different climates and soils. The work of the Official Seed Testing Station goes on steadily, though there has been a decline in 1922–23 in the number of samples tested owing to seasonal and trade conditions. A second course of instruction in seed testing was given. The financial position of the Institute is such that at present sufficient funds are available for the fulfilment of the present programme. Any extension of this, however, is impossible unless adequate outside assistance is forthcoming from the general public, and an appeal is made by the Council to all who are interested to assist either by becoming fellows of the Institute or by making donations to the general funds.

WE are informed by Dr. N. A. F. Moos, late director of Bombay and Alibag Observatories, that the selection of disturbed Bombay magnetic curves mentioned in our issue of October 20, p. 603, was prepared by him, and that he had hoped it might have been possible to include introductory matter and a discussion in the publication.

Our Astronomical Column.

COMETS.—D'Arrest's Comet was observed by M. P. Chofardet at Besançon on Dec. $6^d\ 6^h\ 27^m\ 36^s$ G.M.T., its apparent place being $22^h\ 53^m\ 56{\cdot}30^s$, South Decl. $24^\circ\ 8'\ 41{\cdot}2''$. It was estimated to be of magnitude $12\frac{1}{2}$ to 13; it appeared as a small, ill-defined nebulosity, at most 20″ in diameter, without definite nucleus. The observation was difficult owing to low altitude and the presence of mist near the horizon; it is very creditable to have obtained an observation under these conditions.

Dr. Baade of Bergedorf Observatory is still keeping his comet of October 1922 under photographic observation. It is now well outside the orbit of Jupiter, and its magnitude is less than 15. The long arc of observation will enable the orbit to be calculated precisely and reveal any departure from a parabola that may be present.

STELLAR PHOTOMETRY AT YALE OBSERVATORY.—It was found that the stellar images on photographs obtained with the Loomis Memorial telescope at Yale were unsuitable for purposes of exact measurement of position, and it was accordingly decided to use the instrument for stellar photometry, measuring by means of a Hartmann wedge photometer the density of extra-focal star images. The calibration of the wedge to star-magnitude was determined from some Pleiades plates, using Hertzsprung's standard photographic magnitudes.

Vol. 3, Part II., of the Observatory Transactions contains an investigation of the light curves of the Cepheid RR Ceti and the Algol-variable VV Orionis. The curve of the former differs in two respects from the visual curves of Ichinohe and Praçka: (1) the light range is 0·9 mag. visual, 1·2 mag. photographic, indicating that the star gets redder at minimum; (2) the pause midway in the descent is not shown in the photographic curve, which has, however, a slight hump just before the minimum.

VV Orionis has a curve with two minima, indicating that both stars are luminous, but the brighter star gives nine times the light of the fainter one, which it totally eclipses at secondary minimum. Only one spectrum is seen, so the mass ratio cannot be determined. Assuming that it is 2 to 1, the masses in terms of the sun are 6·9, 3·4, and the diameters 5·3, 2·5.

PARALLAX AND PROPER MOTION OF RR LYRÆ.—Many researches have lately been carried out on the parallaxes of variable stars. *Astr. Nachr.* No. 5260 contains a photographic investigation by H. Fuss of that of RR Lyræ, the period of which is 0·567 days, the spectral type varying from B9 at maximum to F2 at minimum.

A very small value for the parallax, $0\ 0003'' \pm 0{\cdot}0038''$, is found; Van Maanen had found $0{\cdot}006'' \pm 0{\cdot}006''$, so there is no doubt that the star is very remote. In spite of this it has the considerable annual proper motion of $-0{\cdot}0098^{s}$, and $-0{\cdot}202''$ in R.A. and Decl. respectively, so that its linear velocity must be large.