

than tops. Precise knowledge of the factors will not be secured, however, until we have a better understanding of root function.

### Standards of Radioactivity

THE National Physical Laboratory has announced its 1966 list of standards of radioactivity. Among the additions is technetium-99m, which is supplied because of its increasing use for diagnostic studies and its potential applications in a variety of other fields. The standards available from the National Physical Laboratory are confined to those nuclides used in its research programme. This has made possible a reduction in price from £15 to £7 10s. 0d. for a standard consisting of approximately 1 gm of solution enclosed in a flame-sealed glass ampoule. The standards of manganese-54, sodium-22 and caesium-134 are available on application. The standard for strontium-90 and yttrium-90 is also available immediately. The standard of phosphorus-32 will be available during April, that of cobalt-57 during June, and sulphur-35 will be available during September. Technetium-99m will be available during October but special arrangements will have to be made for delivery of this isotope. The first four of the above standards will have an activity quoted at 12.00 G.M.T. on March 1, 1966. Reference times for other standards will be fixed before they are issued. The activity of all standards will be measured using absolute counting techniques and will be compared with previous values using reference ionization chambers. A certificate will be issued with each standard giving: (a) the mean value of the activity per g of solution together with the standard deviation of the mean; (b) the measurement by a standard ionization chamber of the ratio current per mc. for the isotope/current per mc. for all previous issues; (c) an estimate of the overall systematic error. Further information and application forms for standards can be obtained from the Superintendent, Applied Physics Division, National Physical Laboratory, Toddington, Middlesex, England.

### The Institute of Physics and the Physical Society: Appointments and Awards

THE Council of the Institute of Physics and the Physical Society has made the following appointments and awards for 1966: *Guthrie Medal and Prize*: Prof. W. Cochran of the University of Edinburgh for his pioneering researches on accurate crystal structure analysis and on the development of lattice dynamics and its applications to physical properties of crystals. *Rutherford Medal and Prize*: Academician P. Kapitza of the Institute of Physical Problems of the U.S.S.R. Academy of Sciences for his many contributions to physics, including those on which he worked in Lord Rutherford's laboratory. *Glazebrook Medal and Prize*: Lord Hinton of Bankside, formerly of the Central Electricity Generating Board, for his conspicuous service in applying physics to the development of nuclear power. *Maxwell Medal and Prize*: Prof. R. H. Dalitz of the University of Oxford for his many contributions to elementary particle physics. *Charles Vernon Boys Prize*: Dr. P. Duncumb of Tube Investments Research Laboratories for the design and construction of the scanning electron probe system for localized elemental analysis.

### John Murray Travelling Studentships

THE Council of the Royal Society has announced that John Murray travelling studentships for 1966 have been awarded to R. H. Clarke, of the Department of Geology, University of Bristol, to enable him to carry out an investigation of the mixing of deep-sea sediments at Bristol and in the United States, and to Dr. J. W. Murray, lecturer in geology at the University of Bristol, to enable him to work at the Scripps Institution of Oceanography, California, on the ecology of foraminiferids.

### Institute of Actuaries: Election of Officers

DR. B. BENJAMIN has been elected president of the Institute of Actuaries in succession to Sir Herbert Tetley, whose term of office will expire on June 13, 1966. The following honorary officers have been elected for the session 1966-67: *Vice-presidents*, G. V. Bayley, P. R. Cox, G. Heywood and C. M. O'Brien; *Treasurer*, B. Roberts; *Honorary Secretaries*, H. F. Purchase and L. G. Hall.

### Teyler Foundation Medal

THE Directors of the Teyler Foundation and the Members of the Second Society invite entries for the award of the Teyler Medal for 1966-69. Competitors should submit a treatise on the aspects of the interaction between a beam of charged particles and a plasma, which lead to the acceleration or the emission, respectively, of charged particles from such a beam-plasma system. In this connexion, special thought should be paid to cosmic or laboratory plasmas in gases or metals. The point in question concerns the origin of cosmic rays, solar wind and fast electrons in laboratory plasmas or the kinetic generation of secondary electrons from metals. The prize will consist of a gold medal from the Teyler Foundation dies with an intrinsic value of 400 Dutch guilders, or the amount of 400 Dutch guilders if the winner should prefer it. Further information and competition forms can be obtained from the Teyler Foundation, Damstraat 21A, Haarlem. Completed essays should be received by the Foundation before January 1, 1969.

### Appointments

PROF. J. W. CORNFORTH has been awarded the Flintoff Award of the Chemical Society. This award, which is a silver medal and a prize of seventy-five pounds, is made every three years for the most meritorious contribution to the knowledge of the relations between chemistry and botany.

PROF. R. H. GARSTANG, a Fellow of the Joint Institute for Laboratory Astrophysics, has been appointed chairman of the Institute as from January 1, on the retirement of Dr. L. M. Branscomb.

PROF. ABID SADYKOV, president of the Presidium of the Uzbek Supreme Soviet, has been elected president of the Uzbek Academy of Sciences.

### Announcements

A CONFERENCE on "Chemistry of Metal Hydrides", in the EUCHEM series sponsored by the Council of Europe, will be held in the University of Bristol during April 1-7. Further information can be obtained from Prof. F. G. A. Stone, Department of Inorganic Chemistry, University of Bristol.

A SYMPOSIUM on "Management of Engineering Projects" will be held at the College of Science and Technology, University of Manchester, on April 5. Further information can be obtained from S. H. Wearne, Civil Engineering Division, College of Science and Technology, Sackville Street, Manchester 1.

THE twelfth ordinary meeting of the Atomic-Absorption Spectroscopy Group of the Society for Analytical Chemistry will be held in the University of Newcastle upon Tyne on April 5. Further information can be obtained from the Society for Analytical Chemistry, 14 Belgrave Square, London, S.W.1.

THE spring meeting of the Clay Minerals Group of the Mineralogical Society will be held at the British Ceramic Research Association Laboratories, Stoke-on-Trent, during March 31-April 1. Further information can be obtained from D. A. Holdridge, British Ceramic Research Association, Penkhull, Stoke-on-Trent, Staffordshire.