

April 8-10, 1959. The study was restricted to a survey and analysis of the available technological data and consisted of an examination of some 2,500 articles published during the past ten years and a series of some 330 interviews with leading workers in the field. The pattern of current industrial activity in the applications of penetrating high-intensity ionizing radiations; present-day radiation costs; and radiation applications to chemicals and petroleum, to polymers, to pharmaceutical products, medical supplies and food, to power sources, and to miscellaneous substances such as semiconductors, are separately discussed. Much basic work has been done on relatively simple systems, but more research on basic reaction mechanisms and more and better research equipment are required. There is a considerable lack of knowledge both among industrial scientists and by the general public on the subject of radiation, its benefits, and the safeguards against its possible hazards. Future long-term research on the effect of radiation on systems held at very low temperatures and very high pressures; the development of new techniques in solid catalyst activation; and the study of the usefulness of low-energy radiation in the 1-1,000 eV. range, are some of the recommendations in the report. It is emphasized that work up to date has been largely empirical, that possible unique features of radiation applications have not yet been fully explored, and that even radiation engineering is relatively undeveloped and radiation economics uncertain.

### Nobelium Research

IN 1957 P. R. Fields and others reported the production at Stockholm of an isotope of element 102 in experiments in which curium targets were bombarded with cyclotron-accelerated  $^{13}\text{C}^{4+}$  ions (*Nature*, 180, 1010 and 1012, 1957). Two other groups have since reported experiments on the production of element 102. At Berkeley, A. Ghiorso *et al.* bombarded curium with carbon-12 and carbon-13 ions accelerated in *Hilac*, but did not observe the 102-isotope reported by Fields *et al.* They detected and identified the presence of the isotope  $^{254}102$  which has a half-life of three seconds. In Moscow, G. N. Flerov and co-workers, by bombarding plutonium-241 with  $^{16}\text{O}^{4+}$  ions, observed a short-lived product emitting long-range alpha particles with an energy of  $8.8 \pm 0.5$  MeV. which they ascribe to an isotope of element 102. Because of the negative results at Berkeley, Fields and his co-workers have recently made a thorough re-examination of their experimental data, and their comments and discussion on the Berkeley and Stockholm experiments are given in a paper in the *Arkiv för Fysik*, 15, 225 (1959). They conclude that though their earlier mass assignment made in 1957 seems now less certain, nevertheless their re-examination has not led to any new conclusions regarding the interpretation of their results. It is felt that judgment on the discovery of the element 102 should be reserved until additional experimental studies, including the properties of neighbouring nuclides, have been carried out.

### Borden Award of the Nutrition Society of Canada

THE Nutrition Society of Canada has announced that the Borden award of the Nutrition Society of Canada will be given annually in recognition of outstanding research work done by one of its members. The first award will be made in June 1960. The

recipient of this award, which has been presented by the Borden Company Foundation, Inc., must be under the age of forty years and must have published the meritorious work within the preceding three years. It is hoped that this award will further encourage research activities by younger members of the Society.

### Lady Tata Memorial Trust

THE Trustees of the Lady Tata Memorial Trust, on the recommendation of the (European) Scientific Advisory Committee, have made the following awards for research on leukaemia and allied diseases in the academic year beginning October 1, 1959. *Grants for Research Expenses*: Dr. M. Bessis (France), Centre National de Transfusion Sanguine, Paris; Dr. B. M. Braganca (India), Indian Cancer Research Centre, Bombay; Prof. G. Klein (Sweden), Karolinska Institute, Stockholm; Dr. J. Pontén (Sweden), Pathology Institute, Uppsala; Dr. M. Simonsen (Denmark), Institute of Pathological Anatomy, Copenhagen; Dr. A. E. Stuart (Scotland), Department of Pathology, University of Edinburgh; *Scholarships*: Dr. J. Hastrup (Denmark), Institute of General Pathology, Aarhus; Dr. E. Kelemen (Hungary), Postgraduate School of Medicine, Budapest; Dr. P. A. Pillai (India), Centre de Microscopie Electronique, Lausanne, Switzerland.

### Paul Instrument Fund Awards

AWARDS by the Paul Instrument Fund Committee of the Royal Society have been made as follows: £1,000 to Dr. H. B. Barlow, assistant director of research, Department of Physiology, and Mr. P. E. K. Donaldson, technical officer, Physiological Laboratory, Cambridge, for the development (a) of a device for automatically improving coding of messages, and (b) of a diffused storage sequence engine, the object being to advance knowledge of the operation of comparatively simple assemblies of nerve cells by making instruments which perform the same task as such assemblies; £600, in supplement of a previous grant, to Dr. E. T. Hall, senior research officer at the Research Laboratory for Archaeology and the History of Art, Oxford, for improvements to an apparatus with which magnetic measurements may be made with the view of dating archaeological material; £2,000 to Dr. H. Motz, reader in engineering science, University of Oxford (in association with Prof. G. B. Walker, professor of electrical engineering, Essex College, Assumption University, Windsor, Ontario), for the construction of a linear accelerator working at 1.6 cm. (*J*-band); £5,500 to Prof. R. O. Redman, professor of astrophysics in the University of Cambridge, for the construction and testing of a thin astronomical mirror of plate glass and of a new type of support system; £5,900 to Dr. P. M. B. Walker, Royal Society Research Fellow, Department of Zoology, Ashworth Laboratory, University of Edinburgh, for the construction of a new microspectrophotometer that will integrate over a defined but irregular area which can be altered quickly and easily.

### Grant for the Massachusetts Institute of Technology

DR. JULIUS A. STRATTON, president of the Massachusetts Institute of Technology, announced recently that the Institute had received a gift of