

obituary

Leonard Ary Woodward died on June 5 at the age of 73. After starting at Oxford reading mathematics, he switched to chemistry for his final degree, and then went to Leipzig for his Ph.D. (1931), where he developed his lifelong interest in spectroscopy.

He came back to the UK, and, after working for a time at the DSIR, returned to Oxford in 1939, where he was to remain for the rest of his career. It was here that, during the war, he worked on the separation of uranium isotopes by diffusion, research which was to have such influential results. After the war, though, he resumed his work on Raman spectroscopy, a field to which he made major theoretical and experimental contributions. He was made the Aldrichian Praelector in Chemistry in 1966 and served for many years as Dean and then Vice-Principal of Jesus College.

Victor Ivor Little, reader in experimental physics at Royal Holloway College, University of London, died on

May 30 at the age of 56.

On graduating, in 1941 from King's College, London, he was swept up in the war effort, working on radar and the countermeasures to the V1 and V2. This experience confirmed his feelings of the practical importance of physics, an enthusiastic belief he later expressed in some measure by his work, as Chairman of the Examination Board, in restructuring the London 'A' level exams. He was also a brilliant lecturer.

His major scientific work was done in the field of non-linear optics; he early realised the exciting research possibilities of the laser. He was the first to show that standing laser radiation in fluids could create a three-dimensional grating—like a Bragg crystal grating, but on a much larger scale—and, more recently, he contributed to the development of very intense liquid laser sources.

William Bernard Crow, FLS, FZS, FRSM, died on June 28 at the age of 80. In a varied career as biologist

and anthropologist, he studied at the Universities of London and Wales, worked for the Ministry of Munitions in the First World War, returned to Cardiff as a lecturer, became head of the department of Biology at Huddersfield Technical College, senior lecturer at the South West Essex Technical College, a lecturer in adult education (Northern Command) during the Second World War, went to the Leicester College of Technology and finally became Head of the Department of Biology at the Davies, Laing and Dick Tutorial College.

His major scientific interest was in morphology. He published much research in this field as well as a textbook, *Contributions to the Principles of Morphology* (1929). His broad outside interests, however, are reflected in the titles of some of his other publications: *Voice and the Vocal Apparatus*; *The Science of Dreams*, *A Synopsis of Biology*, *A History of Magic, Witchcraft and Occultism* and *Occult Properties of Herbs*.

announcements

Appointments

Professor J. E. Enderby to the Chair of Physics at the University of Bristol.
Dr H. K. Moffatt to the Chair of Applied Mathematics at the University of Bristol.

Professor D. L. Gardner to the Chair of Histopathology at the University of Manchester.

Dr T. B. Grimley and **Dr A. Ledwith** as Professors of Chemistry at the University of Liverpool.

Awards

The EPS Hewlett-Packard Europhysics Prize has been awarded to **Professor Wolfgang Helfrich** of the Freie Universität, Berlin for work on the physics of Liquid Crystals.

The President of the USA has awarded the National Medal of Science to: **John W. Backus** of San Francisco; **Manson Benedict** of Weston, Massachusetts; **Hans A. Bethe** of Ithaca, New York; **Shiing-Shen Chern** of El Cerrito, California; **George B. Dantzig**

of Stanford, California; **Hallowell Davis** of St Louis, Missouri; **Paul Gyorgy** (posthumous award); **Sterling Brown Hendricks** of Silver Spring, Maryland; **Joseph O. Hirschfelder** of Madison, Wisconsin; **William H. Pickering** of Pasadena, California; **Lewis H. Sarett** of Skillman, New Jersey; **Frederick E. Terman**, of Stanford, California, **Orville Alvin Vogel** of Pullman, Washington; **E. Bright Wilson, Jr** of Concord, Massachusetts and **Chien-Shiung Wu** of New York.

The Simon Memorial Prize of the Institute of Physics has been awarded to **Drs D. M. Lee, D. Osheroff** and **R. C. Richardson** for their work on the superfluid phase of ^3He .

Meetings

August 21–27, **Birth Defects**, Montreal (Deadline for abstracts: March 1, 1977) (International Birth Defects Congress Ltd, 1275 Mamoroneck Avenue, White Plains, New York 10605).

September 7–10, **Meeting of the Euro-**

pean Geophysical Society, Amsterdam (3rd EGS Meeting (Registration), c/o Vrije Universiteit, de Boelelaan 1105, Amsterdam).

September 13–15, **Solar Energy in Agriculture**, Reading (The Secretary, UK-ISES, The Royal Institution, 21 Albemarle Street, London W1X 4BS).

September 26–28, **Planning for Water and Waste in Hot Countries**, Loughborough (John Pickford, University of Technology, Loughborough, Leics. LE11 3TU, UK).

September 29–October 1, **Comparative Planetology**, College Park (Dr Cyril Ponnampuruma, Laboratory of Chemical Evolution, Department of Chemistry, University of Maryland, College Park, Maryland 20742).

September 30–October 1, **Pacific NW Regional Meeting of the AGU**, Victoria, British Columbia (Deadline for abstracts: August 27) (John T. Weaver, Dept of Physics, University of Victoria, Victoria, B.C., Canada V8W 2Y2).

October 18–20, **Protein Synthesis**,

Bethesda, Maryland (Dr William Merri-
 cker, Symposium Director, Building 10,
 Room 7D-18, NIH, Bethesda, Mary-
 land 20014).

October 28, **Sources for Emission Spec-**
troscopy, Middlesbrough (The Analy-
 tical Division, Chemical Society,
 Burlington House, London W1V 0BN).

November 17-18, **Ozone/Chlorine Di-**
oxide Oxidation Products of Organic
Materials, Cincinnati (Dr Rip G. Rice,
 International Ozone Institute, Syracuse
 University, New York 13210).

November 24, **Synthesis of Cyclic Com-**
pounds, London (The Assistant Secre-
 tary, Society of Chemical Industry, 14
 Belgrave Square, London SW1 8PS).

November 24, **Applications of Fluori-**
metry to Chromotography, Guildford
 (Mr D. Irish, UV Group, c/o Pye
 Unicam Ltd, York Street, Cambridge).

December 10, **Observation of Surfaces**
and Surface Reactions by TEM, Lon-
 don (Deadline for abstracts to Dr
 W. M. Stobbs, Cavendish Laboratory,
 Madingley Road, Cambridge CB3
 0ME: November 1) (The Meetings
 Officer, The Institute of Physics, 47
 Belgrave Square, London SW1 8QX).

December 13-15, **Optical Properties**
and Effects of Atmospheric Aerosols,
 Williamsburg, Virginia (Deadline for
 papers: September 10) (Franklin S.
 Harris, Jr, MS475, NASA Langley
 Research Center, Hampton, Virginia
 23665).

January 10-14, 1977, **Molecular Clon-**
ing of Recombinant DNA and Genetic
Manipulation as it affects the Cancer
Problem, Miami (Miami Winter Sym-
 posia, PO Box 520906, Miami, Florida
 33152).

March 29-31, 1977, **Luminescence Pro-**
cesses in Phosphors for Cathode-Ray
Tubes and Lamps, Weybridge, Surrey
 (Dr P. Greenough, General Electric Co
 Ltd, Hirst Research Centre, East Lane,
 Wembley, Middlesex HA9 7PP, UK).

April 25-29, 1977, **Mitosis: Facts and**
Questions (Deadline for applications:
 September 30) (Organising Committee,
 Kennwort: Mitosis, Institut für Zell-
 forschung, Deutsches Krebsforschungs-
 zentrum, PO Box 101949, D-6900
 Heidelberg, FRG).

June 1-3, 1977, **Pathobiology of En-**
vironmental Pollutants, University of
 Connecticut (Deadline for abstracts:
 January 1, 1977) (George Migaki,
 D.V.M., Registry of Comparative Patho-
 logy, Armed Forces Institute of Patho-
 logy, Washington, D.C. 20306).

July 6-8, 1977, **Hot Electrons in Semi-**
conductors, Denton, Texas (Deadline
 for abstracts: March 1, 1977) (Dr D. G.
 Seiler, Physics Dept, North Texas
 State University, Denton, Texas 76203.)
 August 9-19, 1977, **IASPEI/IAVCEI**

Person to Person

The Superconducting Magnet Re-
 search Group at the SRC Ruther-
 ford Laboratory now provides
 superconductor testing facilities
 for users in industry, universities
 and other research establishments.
 Tests on the behaviour of the
 critical superconducting current
 will be performed with two super-
 conducting magnets: One of
 85-mm bore produces 9 T, while
 the second gives 10.5 T in a 50-mm
 bore solenoid. A 15-T magnet will
 be available later.

The Commission of the European
 Communities, advised by the Com-
 mittee on Medical Research and
 Public Health (CRM/CREST), is
 sponsoring European Travelling
 Fellowships for physicians, medical
 researchers or public health
 officers who are actively engaged
 in public health or population
 studies. Applications to the Com-
 mission of the European Com-
 munities, Directorate-General Re-
 search, Science and Education,
 XII/C-1, 200, rue de la Loi 1049,
 Brussels.

There will be no charge for this service.
 Send items (not more than 60 words) to
 Martin Goldman at the London office. The
 section will include exchanges of accommo-
 dation, personal announcements and scientific
 queries. We reserve the right to decline
 material submitted. No commercial trans-
 actions.

Assembly, Durham (Dr R. E. Long,
 IASPEI/IAVCEI Assembly Office,
 University of Durham, Dept of Geo-
 logical Sciences, Science Laboratories,
 South Road, Durham DH1 3LE, UK).

September 4-9, 1977, **4th International**
Congress of Photosynthesis, Reading
 (Dr J. Coombs, c/o Tate and Lyle Ltd,
 Group Research and Development, PO
 Box 68, Reading RG6 2BX, Berks,
 UK).

September 6-9, 1977, **Plant Cell and**
Tissue Culture: Principles and Appli-
cations, Columbus, Ohio (Fourth
 Annual Colloquium, College of Bio-
 logical Sciences, 484 W. 12th Avenue,
 The Ohio State University, Columbus,
 Ohio 43210).

September 19-22, 1977, **Electron Dif-**
fraction, London (The Meetings
 Officer, The Institute of Physics, 47
 Belgrave Square, London SW1 8QX).

September 19-24, 1977, **Availability**
and Rational Uses of Energy Resources,
 Istanbul (The Secretary General of the
 World Energy Conference, 5 Bury
 Street, St James's, London SW1Y
 6AB, UK).

October 31-November 3, 1977, **Advan-**
cing Energy Technology, Eastbourne,

Sussex (Deadline for abstracts: Janu-
 ary 3, 1977) (Prof A. Williams, The
 University of Leeds, Leeds LS2 9JT,
 UK).

Reports and Publications

Gt Britain

Bulletin of the British Museum (Natural History).
 Entomology, Vol. 33, No. 1 + The Classification of the
 Anomalinae (Hymenoptera: Ichneumonidae). By
 Ian David Gauld. Pp. 1-135. (London: British Museum
 (Natural History), 1976.) £10.70. [233]

Memoirs of the Royal Astronomical Society, Vol. 81,
 Part 2: Polarimetric Observations of the Zodiacal
 Light in Hawaii from 1969 to 1974. By L. W. Bander-
 mann and R. D. Wolstencroft. The Nebular Complexes
 of the Large and Small Magellanic Clouds. By R. D.
 Davies, K. H. Elliott and J. Meaburn. Pp. 37-128 +
 21 plates. (Oxford and London: Blackwell Scientific
 Publications, 1976. Published for the Royal Astronomical
 Society.) [233]

Superstar Technologies. (The problem of monitoring
 technologies in those instances where technical com-
 petence is monopolised by a small number of institu-
 tions committed to the same interest.) The Report of
 a Working Party. Convenor: Geoffrey Chin. Council
 Representative: Professor John Ziman, FRS. Pp. 66.
 (Chichester: Barry Rose (Publishers), Ltd., in associa-
 tion with The Council for Science and Society,
 London.) £2. [243]

Imperial Cancer Research Fund. Annual Report
 and Accounts, 1975. Pp. 41. Scientific Report. P. 162.
 (London: Imperial Cancer Research Fund, 1976.) [243]

University of Oxford. Annual Reports, 1973/1974,
 Pp. 12. (Oxford: The University, 1976.) 75p. [263]

The Small Towns of Hampshire: The Archaeological
 and Historical Implications of Development. By
 Michael Hughes. Pp. iv + 148. (Southampton:
 Hampshire Archaeological Committee, Department
 of Archaeology, The University, 1976.) £1.50. [263]

Radio, Television and the Arts. By Howard Newby.
 (BBC Lunch-Time Lectures, Tenth Series, No. 4.)
 Pp. 16. (London: BBC, 1976.) [293]

Bulletin of the British Museum (Natural History).
 Entomology, Vol. 33, No. 2: A Review of the Genus
Anotylus C. G. Thomson (Coleoptera: Staphylinidae).
 By P. M. Hammond. Pp. 137-187 + 3 plates. (London:
 British Museum (Natural History), 1976.) £4.35. [293]

Natural Environment Research Council. Institute
 of Geological Sciences. Geomagnetic Bulletin No. 5:
 Magnetic Results 1971-Eskdalemuir, Hartland and
 Lerwick Observatories. Pp. vi + 97. £4.50. Geomag-
 netic Bulletin No. 6: Annual Mean Values of
 Geomagnetic Elements since 1941. Pp. 170. £7.
 (London: HMSO, 1975 and 1976.) [293]

Proceedings of the Royal Irish Academy. Vol. 76,
 Section A. No. 1: On the Coefficients in the Recursion
 Formulae of Orthogonal Polynomials. By G. Freud.
 Pp. 1-6. 45p. No. 2: A Note on Complementarity in
 Lattices of Convergence Functions. By C. A. Boyd.
 Pp. 7-10. 25p. No. 3: A Note on the Reflection
 Principle for Harmonic Functions. By D. H. Armitage.
 Pp. 11-14. 28p. No. 4: The Ideal Centre of a Banach
 Lattice. By A. W. Wickstead. Pp. 15-24. 48p. No. 5:
 Haar Measures for Groupoids. By A. K. Seda. Pp.
 25-36. 48p. No. 6: On the Construction of the Kerr
 Congruence. By P. A. Hogan. Pp. 37-42. 45p. No. 7:
 Relaxation Effects in Rotational Brownian Motion.
 By J. T. Lewis, J. McConnell and B. K. P. Scaife. Pp.
 43-70. 92p. No. 8: Modified Kohn Variational
 Principle, The Virial Theorem and the Second Virial
 Coefficient. By W. D. Burns and B. L. Moiseiwitsch.
 Pp. 71-78. 50p. Vol. 76, Section B. No. 4: Stratigraphy
 Sedimentology and Structure of the Bray Group in
 County Wicklow and South County Dublin. By P. M.
 Bruck and T. J. Reeves. Pp. 53-78 + plates 1-3. 87p.
 No. 5: Formation of Oxo-Compounds from Chloro-
 benzodiazines in Dimethylsulphoxide. By D. Twomey.
 Pp. 79-86. 25p. No. 6: A Preliminary List of the Fungus-
 Gnats (Diptera: Mycetophilidae) of Ireland. By F. J.
 Chandler. Pp. 87-110. 66p. No. 7: The Submarine
 Extensions of the Thorr and Fanad Plutons, County
 Donegal. By D. Evans and R. J. Whittington. Pp.
 111-120. 40p. (Dublin: Royal Irish Academy, 1976.)
 [303]

Other countries

US Department of the Interior: Geological Survey.
 Bulletin 1395-E: Changes in Nomenclature of Upper
 Precambrian to Lower Paleozoic(?) Formations in the
 Natick Quadrangle, Eastern Massachusetts, and
 Their Tentative Correlations with Rocks in Rhode
 Island and Connecticut. By A. E. Nelson. Pp. iii + 15.
 (Washington, DCL US Government Printing Office,
 1974.) 35 cents. [303]

Toxicology Research Projects Directory, Vol. 1,
 No. 1, January 1976. (An Indexed Directory of Current
 Research Project Abstracts in Toxicology and Related
 Fields.) Pp. 701. (Bethesda, Md.: Toxicology Informa-
 tion Subcommittee of the DHEW Committee to Coordi-
 nate Toxicology and Related Programs, 1976. Orders to
 Toxicology Document and Data Depository, National
 Technical Information Service, Springfield, Virginia,
 22161. Specify Publication No. NTISUB/B(021-76/
 001.) Single issue \$20. Subscription (4 issues) \$65. [313]

Smithsonian Contributions to Zoology, No. 213:
 Communication Mechanisms and Social Integration in
 the Black Spider Monkey, *Atelés fusciceps robustus*,
 and Related Species. By John F. Eisenberg. Pp. vi +
 108. (Washington, DC: Smithsonian Institution Press,
 1976. For sale by US Government Printing Office.) [313]