

the Sir William Dunn School of Pathology at Oxford to help with work on new antibiotics and obtained a D.Phil. in 1951. He subsequently joined the external staff of the Medical Research Council and later became a university Senior Research Officer and a Fellow of St Cross College, Oxford.

The most important of Newton's contributions to scientific research concerned peptide or peptide-like antibiotics. He isolated the polypeptide bacitracin, which found some use in medicine, and was closely involved in the work which established its amino-acid sequence and showed that it contained a novel thiazoline ring. After research had begun in Oxford on the antibiotics produced by a species of *Cephalosporium*, he played an important part in work which led to the isolation of penicillin *N* and the determination of its structure. It was during this work that crude preparations of penicillin *N* were found to contain a new but related compound, cephalosporin *C*, which was resistant to staphylococcal penicillinase. Newton made important contributions to the determination of the structure of cephalosporin *C* and to experiments which showed that different cephalosporins could be obtained by replacing its acetoxy group with certain nucleophiles and by removing its D- α -aminoadipoyl side chain to yield 7-aminocephalosporanic acid. From the basis provided by this work pharmaceutical companies in the United States and Britain were able to produce cephalosporins of clinical value, and the National Research Development Corporation negotiated royalty agreements which have provided it with a considerable revenue. Newton was able to use a small part of this money to set up a trust fund for medical research. Guy Newton was an unselfish and completely unpretentious man of absolute integrity. His conscientiousness and meticulous attention to detail contributed in no small measure to his scientific achievements.

Correspondence

Misunderstood Profession

SIR,—As an ordinary member of the NUT who has taught in secondary modern and independent schools for some ten years, I find your editorial "Misunderstood Profession" (221, 304; 1969) not only untrue but objectionable in its incitement to strike action for improved pay.

In the opinion of many teachers, too much of the NUT's energy goes into problems of pay scales and too little into conditions of service for teachers and the interests of the pupils.

Someone who is not a member of the teaching profession said recently that teachers' pay is not unreasonable for the number of hours worked compared with industry. Although I would like to refute this statement on the grounds that long hours are spent in marking and preparation which makes up for the longer holidays, in my experience a very large proportion of teachers never prepare a lesson, seldom mark a book and generally stick rigidly to work in school hours only. To justify increased pay, the profession should put its own house in order in this respect and such obligations should be taught in the teacher training colleges.

If you are looking for a justifiable criticism of the NUT, it can be found in the way in which it virtually ignores the teacher/pupil ratio in primary and secondary schools and has supported the Government in its intention to raise the school leaving age, before it has provided an adequate number of teachers to cope with the existing school numbers.

In my experience, the NUT remark which you treat with a douche of cold water, that most teachers enter the profession for idealistic reasons, is undoubtedly true, but they very soon get their idealism knocked out of them when faced with six classes of forty or more children each day.

The matter of class size is one of the main justifications for the independent schools. Parents know that classes will be of a size which allows the teacher to teach and not spend the whole of his time just maintaining discipline. There are schools in many areas, particularly in London and the larger cities, where children can go right through school and come out virtually illiterate at the end; class size is almost the sole reason for this situation.

Yours faithfully,

MARY SCOTT

The Spindles,
Telham Lane,
Battle,
Sussex.

Brighter Statistics

SIR,—Your comments (*Nature*, 221, 504; 1969) on the University Grants Committee statistics on costs per student are, in one respect, misleading. You state that "some very small biological departments prove to be extremely expensive", and quote as one example that Sussex, with 32 undergraduates and 11 graduate students, costs £2,000 per head. It is possibly true that small departments are uneconomic, but it is wrong to quote Sussex to prove it.

The figures quoted are for our first year of opening, 1965-66, when there were only a small group of first-year undergraduates in the school. In 1967-68, there were 269 undergraduates and 66 postgraduate students in the school, and the cost per head was appreciably below the figure of £930 which was the national average in 1965-66 for biological sciences.

Yours faithfully,

J. MAYNARD SMITH

University of Sussex,
Biology Building,
Falmer, Brighton,
Sussex.

University News

Dr J. R. Dunning has resigned from his post as dean of the Columbia University School of Engineering and Applied Science and has become the first holder of the Thayer Lindsley professorship in applied science.

Dr J. Friend has been appointed to the chair of botany at the **University of Hull**.

Professor O. V. S. Heath is to retire from the chair of horticulture at the University of Reading; he will continue as director of the ARC Unit of Flower Crop Physiology.

Dr D. S. Dugdale has been appointed to a personal chair in the Department of Mechanical Engineering at the **University of Sheffield**.

Appointments

The **Earl of Bessborough** has been appointed the deputy chairman of the Metrication Board. The chairman is Lord Ritchie-Calder.

Dr H. M. Mark, chairman of the Department of Nuclear Engineering at the University of California, has been appointed director of NASA's Ames Research Center, California.

International Meetings

March 6, **International Collaboration in Radio Science**, London (Institution of Electrical Engineers, Savoy Place, London WC2).

March 8 and April 26, **Drug Addiction**, Bradford (Registrar, University of Bradford, Bradford 7, UK).

March 27, **Solid State Electrochemistry**, London (Dr B. C. H. Steele, Room 506, Royal School of Mines, Prince Consort Road, South Kensington, London SW7).

April 16, **Selenium and Tellurium in Iron and Steel**, Stockholm (Air Commodore B. Bergman, Information Officer of the Swedish Institute for Metal Research, 48 Drottning Kristinas Vag, S-114 28 Stockholm, Sweden).

September 2-6, **Education and Training Technology**, London (A. V. Phelps, ETTIC 69, Savoy Place, London WC2).

September 7-11, **Biochemistry of Lipids**, Athens (Secretariat, ICBL, Biochemical Research Laboratory, Department of Clinical Therapeutics, University of Athens, Alexandra Hospital, Vas. Sophias and K. Lourou Street, Athens 611, Greece).

September 7-13, **Hydrology of Glaciers**, Cambridge (Secretary, Glaciological Society, c/o Scott Polar Research Institute, Cambridge, UK).

September 7-13, **Volcanoes and their Roots**, Oxford (Dr J. D. Bell, Department of Geology and Mineralogy, Parks Road, Oxford, UK).

September 7-13, **Congenital Malformations**, The Netherlands (Holland Organizing Centre, 16 Lange Voorhout, The Hague, The Netherlands).

September 8-12, **In Vitro Procedure with Radioisotopes in Clinical Medicine and Research**, Vienna (National Authorities for Atomic Energy Matters).

September 11-12, **Sulphur in Nutrition**, Oregon (Dr J. E. Oldfield, Department of Animal Science, Oregon State University, Corvallis, Oregon 97331, USA).

September 18-20, **Computers in Radiology**, Brussels (Executive Office, Colloque de Radiologie, 64 Chaussee de Haecht, Bruxelles 3 Belgium).

Sabbatical Itinerants

In the hope of providing some practical assistance in the good cause of mobility between laboratories, *Nature* is proposing to advertise the needs for housing of families about to take up periods of sabbatical leave. To begin with, no charge will be made for advertisements like this. It is hoped that a period of experiment will show what form these advertisements could most usefully take and whether they are effective.

Vacant: For one year from August 10, 1969, well-furnished house in area of University of Western Ontario, with 3 bedrooms, living room, dining room, study, kitchen/breakfast room, 1½ bathrooms, garage and carport in 1 acre grounds. Excellent school in vicinity. Please contact Dr A. Stoessl, 1589 McClure Drive, London, Ontario, Canada.

Vacant: In Chicago within walking distance of the University of Chicago, parks and the lake, 7-roomed apartment, 4 bedrooms, 2 baths. Air-conditioned with usual appliances. Suitable for family with children. Available from mid-June to mid-September. Station-waggon could be included. Please contact Anthony Robertson, Committee on Mathematical Biology, University of Chicago, Chicago 60637.

BRITISH DIARY

Monday, March 3

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 2 p.m. and 5.30 p.m.—Discussion meeting on "Apparatus for System Fault Recording and Location and Equipment Alarm Annunciation" opened by Mr A. E. Cruddace, Mr J. W. Gillies, Mr E. Jamieson and Mr D. J. Eastaugh.

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Professor M. Fleischmann: "Electrochemistry in the Future".

SOCIETY OF ENGINEERS (at the Geological Society, Burlington House, Piccadilly, London, W1), at 5.30 p.m.—Dr K. A. Mulholland: "Noise (or Unwanted Sound)".

UNIVERSITY OF LONDON (in the Botany Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor K. Mühlethaler (Swiss Federal Institute of Technology): "The Ultrastructure of Cytoplasmic Membranes".

UNIVERSITY OF LONDON (in the Physics Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor G. K. O'Neill (Princeton University): "Particle Physics at Extreme Energies; the New CERN Storage Rings" (further lecture on March 5).

INSTITUTION OF MECHANICAL ENGINEERS, Medical Engineering Working Party (at 1 Birdcage Walk, London, SW1), at 6 p.m.—Discussion meeting on "Reliability of Implants and other Medical Equipment".

ROYAL SOCIETY OF ARTS (at John Adam Street, London, WC2), at 6 p.m.—Dr Robert C. G. Williams: "Educational and Training Technology" (last of three Cantor Lectures on "Technology in Education").

SOCIETY OF CHEMICAL INDUSTRY, LONDON SECTION (joint meeting with the Heavy Organic Chemical Group, at 14 Belgrave Square, London, SW1), at 6.30 p.m.—Mr D. J. W. Anthony: "The Australian Chemical Industry".

Tuesday, March 4

UNIVERSITY OF LONDON (in the Anatomy Theatre, University College London, Gower Street, London, WC1), at 1.20 p.m.—Mr R. M. Perkins: "The Scandinavian Discovery of America".

INSTITUTION OF MECHANICAL ENGINEERS, TRIBOLOGY GROUP; and the MINISTRY OF TECHNOLOGY (at 1 Birdcage Walk, London, SW1), at 3 p.m.—Discussion meeting on "Tribological Problems in Industry".

UNIVERSITY OF LONDON (at Westminster Hospital Medical School, London, SW1), at 5.15 p.m.—Dr J. F. Zilva: "The Effect of Steroids on Iron Metabolism".

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY (in the Department of Mechanical Engineering, Exhibition Road, London, SW7), at 5.30 p.m.—Professor W. Murgatroyd: "Forty Years of Thermal Power" (Inaugural Lecture).

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Mr C. S. Burnham and Mr G. J. McDonald: "Review of Progress in Mercantile Marine Radiocommunications".

ROYAL INSTITUTION (at 21 Albemarle Street, London, W1), at 5.30 p.m.—Professor George Porter, FRS: "Light and Life" (lecture for Sixth Form Pupils from schools in London and the Home Counties. To be repeated on March 5, 11 and 12).

UNIVERSITY OF LONDON (at King's College, Strand, London, WC2), at 5.30 p.m.—Professor Seldon D. Bacon: "Alcohol, Science and Society" (Dent Memorial Lecture).

UNIVERSITY OF LONDON (at the Institute of Child Health, Guilford Street, London, WC1), at 5.30 p.m.—Professor G. S. Brindley: "Functions of the Central Pathways of Vision" (last of sixteen lectures on "The Scientific Basis of Medicine" organized by the British Postgraduate Medical Federation).

UNIVERSITY OF LONDON (in the Botany Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor G. A. Lindeboom (Free Reformed University of Amsterdam): "Boerhaave's Debt to British Science, and British Medicine's Debt to Boerhaave" (further lectures on March 5 and 6).

INSTITUTION OF MECHANICAL ENGINEERS (at the University College of South Wales and Monmouthshire, Cardiff), at 6 p.m.—Mr R. A. Lake: "The Performance of Steelworks Equipment in Service" (John Player Lecture).

Wednesday, March 5

ASSOCIATION OF CLINICAL BIOCHEMISTS, SOUTHERN REGION (in the Edward Lewis Lecture Theatre, The Middlesex Hospital, London, W1), at 10.30 a.m.—Meeting on "Some Recent Advances in Clinical Biochemistry".

ROYAL INSTITUTION, HISTORY OF SCIENCE DISCUSSION GROUP (at 21 Albemarle Street, London, W1), at 1 p.m.—Mr J. K. Crellin: "Chemistry through Medicine in 18th Century Britain".

INSTITUTION OF CHEMICAL ENGINEERS, LONDON AND SOUTH EASTERN BRANCH (at the Royal Aeronautical Society, Hamilton Place, London, W1), at 2 p.m.—Symposium on "Recent Research on Powders".

COLOUR GROUP (Great Britain) (in the Physics Building, Imperial College, London, SW7), at 2.30 p.m.—Mr A. Cuthbert and Mr H. L. Gloag: "Yellow—A Key to Constant Hue from Grey to Clear".

SOCIETY FOR ANALYTICAL CHEMISTRY, NORTH OF ENGLAND SECTION and the PARTICLE SIZE ANALYSIS GROUP (in the Department of Ceramics and Refractories Technology, University of Sheffield), at 2.30 p.m.—Meeting on "Inertial Methods of Particle Size Analysis".

INSTITUTE OF NAVIGATION (at the Royal Institution of Naval Architects, 10 Upper Belgrave Street, London, SW1), at 5 p.m.—Meeting on "The Value of Simulators in Training Sea and Air Navigators".

ROYAL METEOROLOGICAL SOCIETY (at 49 Cromwell Road, London, SW7), at 5 p.m.—Dr J. F. Nye: "The Advance and Retreat of Glaciers" (Margary Lecture).

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Mr G. T. F. Widger and Dr B. Adkins: "Starting Performance of Synchronous Motors with Solid Salient Poles".

POLAROGRAPHIC SOCIETY (in the Metallurgy Department, Royal School of Mines, Prince Consort Road, London, SW7), at 5.30 p.m.—Professor C. B. Alcock: "Solid Electrolytes in High Temperature Studies".