

concludes from extensive evidence that the answer appears to be a definite "no"; indeed that "no data can be found to suggest that any other conclusion is possible". You are aware of the passionate protests, which led sometimes to legal action, by people living in the immediate vicinity of London Airport, who suffered from the noise of jet planes. Imagine such protests, spread throughout most of the entire population of Great Britain, and you can picture the consequences of a regular programme of supersonic flights over populated areas. For the detailed evidence one must refer to Kryter's article, and to the reports he cites. He emphasizes that his conclusions are based on objective data concerning human response to sonic booms, and do not lean in any way on "humanitarian conjectures" regarding the effects of sonic booms on human health and wellbeing.

A full fledged programme of commercial supersonic flights across the United States, as formerly envisaged, would also lead to extensive property damage, estimated by Kryter from the available data, on damage claims due to sonic booms from military planes, as amounting to 40 to 80 million dollars per year. Our own estimates² from the same data would run several times as high as this. In any case the anticipated damage would be substantial, for both the Concorde and the American SST will produce booms with substantially higher overpressures than the military planes used in the tests.

Concerning the Concorde, your editorial states "it would, of course, be foolish to cancel the programme of development—the objective should be to get back as much as possible of the money which has been spent". We suggest that it might be wiser to write off the money spent as the cost of a useful lesson from bitter experience.

Many of the developments of technology in our time yield short term benefits while they degrade the total human environment, polluting water and air, and threatening the quality of life for future generations. In November 1968 a special study group of experts reported to the US Secretary of the Interior on "Noise and the Sonic Boom in Relation to Man". They pointed out that "every new technology carries its own adverse effects and these must receive attention equal to the technology itself. . . . Usually the public which reaps the benefits from a decision is different from the public which suffers the adversities. The decision-making should recognize both publics by providing for continuing work on both sides of the question, not at some distant time in the future but right from the moment of decision."

We hope that in future *Nature* may consider new technological proposals in this broader spirit, and not talk merely in terms of "getting back as much as possible of the money which has been spent". In the particular case of the Concorde, or of the American SST, a really critical appraisal of its commercial prospects alone might well have been enough to kill the project. In other possible technological developments, however, the immediate financial returns to the developers may well be very attractive, while the long term effects on the total human environment might be most deleterious. We trust that *Nature*, with its immense influence in the scientific world, will in future consider such projects in their broad implications for the human community in general.

Yours faithfully,

WILLIAM A. SHURCLIFF
JOHN T. EDSALL

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19, Appleton Street,
Cambridge,
Massachusetts, 02138.

¹ The Anti-Concorde Project, 70 Lytton Ave., Letchworth, Herts, England.

² Shurcliff, W. A., "SST and Sonic Boom Handbook" (Citizens League Against the Sonic Boom, 1968).

New Constitution for British Physicists

SIR,—The recent article in *Nature* (220, 952; 1968) on the Institute of Physics and the Physical Society has drawn attention to the fact that many of the members are discontent with the proposed changes in the structure of the institute and society which are associated with the application for a Royal Charter. Professor Blackman's letter in *Nature* (221, 105; 1969) has given details of the reasons for the disquiet felt by fellows of the Physical Society, and I would like to draw attention to a matter which is of no less concern to licentiates of the Institute of Physics.

The proposed membership changes which accompany the application for a Royal Charter will have the effect of depriving licentiates of their existing right to the use of an abbreviated designation of their grade. For licentiates, who have the right to use "L.Inst.P." are to become associates who will have no right to the use of an abbreviated designation. I consider that this is an unjustified reduction of status, and British physicists should clearly understand that the "intangible" advantages of a Royal Charter are being sought at the expense of a real deprivation to licentiates.

Yours faithfully,

G. WEST

25, Valley Crescent,
Wokingham,
Berkshire.

Appointments

Professor Dan Lewis, University College London, has been appointed a member of the **University Grants Committee**.

Announcements

The **David Anderson-Berry Silver-Gilt Medal**, together with an award of not less than £100, is to be presented by the Council of the Royal Society of Edinburgh during 1969 in recognition of recent work on the effects of X-rays and other forms of radiation on living tissues. Further information can be obtained from the General Secretary, Royal Society of Edinburgh, 22-24 George Street, Edinburgh 2, Scotland.

CORRIGENDUM. In the book review by G. H. Williams entitled "Radical Ion Chemistry" (*Nature*, 221, 494; 1969) the first sentence of the third paragraph should read "The topics reviewed are: electron spin densities and their determination (James R. Bolton); metal ketyls and related radical ions including a discussion of the ion pair equilibria in which these species are involved (Noboru Hirota); semidione radical ions (Glen A. Russell); the e.s.r. spectra of radical cations, with a short section on the preparation of these species (Gershon Vincow); . . ."

ERRATUM. In the article "Sex Determination Reconsidered" (*Nature*, 221, 410; 1969) "grandes hypotheses" should be "groundless hypotheses".

ERRATUM. In the article "Origins of Natural Gas and Petroleum" by W. G. Meinschein, Yaron M. Sternberg and Ronald W. Klusman (*Nature*, 220, 1185; 1968), the following corrections are necessary: (1) page 1185, column 2, last line should read: ". . . elements to form gas accumulations, and some gases, . . ."; (2) page 1186, column 2, line 7 should read: ". . . lines, y , equals the concentrations of methane normalized to methane equal to 100 per cent and y and . . ."; (3) page 1187, Fig. 3, curves $A(a)$ and $A(b)$ each should be shifted vertically until the upper end of each curve intersects the left Y -axis at 100, thereby normalizing methane to 100 per cent.

International Meetings

March 18–20, **Science Abstracting and Indexing Services**, North Carolina (National Federation of Science Abstracting and Indexing Services, 2102 Arch Street, Philadelphia, Pennsylvania 19103, USA).

March 24–27, **Cryogenics in Fuel and Power Technology**, London (The Institution of Electrical Engineers, Conference Department, Savoy Place, London WC2).

March 27–29, **Education in the Health-Related Professions**, New York (Jean Fitzpatrick, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021).

April 21–25, **Switching Techniques for Telecommunications Networks**, London (The Institution of Electrical Engineers, Conference Department, Savoy Place, London WC2).

May 2–3, **The Laser**, New York (Jean Fitzpatrick, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021).

May 16–17, **The Nature and Function of Peroxisomes**, New York (Jean Fitzpatrick, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021).

July 7–18, **Environmental Effects on Antenna Performance**, Colorado (Professor S. A. Maley, Electrical Engineering Department, University of Colorado, Boulder, Colorado 80302, USA).

September 9–12, **Non-linear Optics**, Belfast (The Meetings Officer, The Institute of Physics and The Physical Society, 47 Belgrave Square, London SW1).

September 17–19, **High Magnetic Fields and their Applications**, Nottingham (The Meetings Officer, The Institute of Physics and The Physical Society, 47 Belgrave Square, London SW1).

September 21–25, **Comparative Leukemia Research**, New Jersey (Dr Ray M. Dutcher, General Chairman, School of Veterinary Medicine, University of Pennsylvania, New Bolton Center, Kennett Square, Penna., 19348, USA, or Dr Hans J. Bendixen, Secretary of the World Committee for Comparative Leukemia Research, Statens Vet. Serumlab., Howitzvej 11, Copenhagen F., Denmark).

September 21–28, **Neurology**, New York (Pearce Bailey, Secretary-Treasurer, World Federation of Neurology, c/o NINDB, Bercham-Antwerp, Belgium).

September 22–26, **Tribology in Iron and Steel Works**, London (Iron and Steel Institute, 4 Grosvenor Gardens, London SW1).

September 22–27, **Electrochemical Thermodynamics and Kinetics**, Strasbourg (Dr H. Tannenberger, c/o Institut Battelle, Centre de Recherche de Geneva, 7, Route de Drize, 1227 Carouge-Geneve, Switzerland).

September 23–25, **World Airports**, UK (The Institution of Civil Engineers, Great George Street, London SW1).

September 23–25, **Filtration Society**, London (W. G. Norris, Hon. Secretary, The Filtration Society, 1 Katherine Street, Croydon, UK).

September 23–26, **Filtration and Separation**, London (Miss Maureen Duck, Pressaids, Ltd, 5 New Bridge Street, London EC4).

September 23–26, **Dust Control and Air Cleaning**, London (Miss Betty Skewes, Pressaids, Ltd, 5 New Bridge Street, London EC4).

September 24–26, **Micrographic Congress Meeting**, Frankfurt am Main (Carl E. Nelson, Executive Secretary, 13388 Hammons Av., Saratoga, California 95070, USA).

September 24–26, **Nuclear Structure and Elementary Particle Physics**, Brighton (The Meetings Officer, The Institute of Physics and The Physical Society, 47 Belgrave Square, London SW1).

BRITISH DIARY

Monday, February 17

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Mr G. C. Eltenton: "Brain Efficiency *versus* Educational Inefficiency".

UNIVERSITY OF LONDON (in the Anatomy Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor R. Ceppellini (Turin): "Genetic Control Over Antibody Structure" (further lectures on February 18 and 19).

ROYAL SOCIETY OF ARTS (at John Adam Street, London, WC2), at 6 p.m.—Sir Eric Richardson: "Education in a Technologically-Based Society" (first of three Cantor Lectures on "Technology in Education").

SCIENCE OF SCIENCE FOUNDATION, MEDICAL COMMITTEE (at the Hospital Centre, Nutford Place, London, W1), at 6.15 p.m.—Dr Peter Draper: "Possible Changes in the Organization of Medical Care".

Tuesday, February 18

SOCIETY OF CHEMICAL INDUSTRY, AGRICULTURE GROUP AND PHYSICO-CHEMICAL AND BIOPHYSICAL PANEL (Pesticides Group) (at 14 Belgrave Square, London, SW1), at 10 a.m.—Symposium on "Diffusion from Soil to Plant".

UNIVERSITY OF LONDON (at the London School of Economics and Political Science, London, WC2), at 5 p.m.—Professor Peter Haggett: "Alternative Models of Geographic Space".

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Mr W. N. Sproson: "The Specification and Testing of Lenses for Television Applications"; Mr W. A. Woodley: "CRT Resolution Measuring Techniques".

UNIVERSITY OF LONDON (at the Institute of Child Health, Guilford Street, London, WC1), at 5.30 p.m.—Professor J. Hardwicke: "Proteinuria" (twelfth of sixteen lectures on "The Scientific Basis of Medicine" organized by the British Postgraduate Medical Federation).

UNIVERSITY OF LONDON (in the Anatomy Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor R. Ceppellini: "Genetics of Tissue Transplantation in Man".

INSTITUTION OF ELECTRONIC AND RADIO ENGINEERS, INSTRUMENTATION AND CONTROL GROUP (at 9 Bedford Square, London, WC1), at 6 p.m.—Mr G. P. Rigby and Mr M. Hilton: "Instrumentation and Control in Float Glass Manufacture".

UNIVERSITY OF LONDON (at University College London, Gower Street, London, WC1), at 6.30 p.m.—Dr A. Oppenheim: "Behavioural Approaches to the Study of Conflict" (sixth of nine University Extension Lectures on "Conflict Research and International Studies—a Scientific Approach").

Wednesday, February 19

ROYAL INSTITUTION, HISTORY OF SCIENCE DISCUSSION GROUP (at 21 Albemarle Street, London, W1), at 1 p.m.—Dr F. A. B. Ward: "Bird Flight and Radar—a Service of Physics to Zoology".

EAST MALLING RESEARCH STATION (at Wye College, near Ashford, Kent), at 2.30 p.m.—Professor R. L. Wain, FRS: "Chemicals, Fruit and the Future" (22nd Amos Memorial Lecture).

SOCIETY FOR ANALYTICAL CHEMISTRY, EAST ANGLIA SECTION (at Bakelite Xylonite, Ltd., Lawford Place, Manningtree, Essex), at 2.30 p.m.—Meeting on "The Analysis of Plastics Formulations".

GEOLOGICAL SOCIETY OF LONDON (at Burlington House, Piccadilly, London, W1), at 5 p.m.—Dr P. A. Sabine: "The Seven Stones Granite between Land's End and the Scilly Isles" (demonstration); Dr P. Wallace: "The Sedimentology and Palaeoecology of the Devonian of the Perques Inlier, Northern France"; Dr R. G. Park: "The Structural Evolution of the Tollie Antiform—a Geometrically Complex Fold in the Lewisian North-East of Gairloch, Ross-shire".

ROYAL METEOROLOGICAL SOCIETY (at 49 Cromwell Road, London, SW7), at 5 p.m.—Mr D. G. Vincent: "Mean Meridional Circulation in the Northern Hemisphere Lower Atmosphere During 1964 and 1965"; Mr A. J. Dyer and Mr B. B. Hicks: "Global Spread of Volcanic Dust from the Bali Eruption of 1983"; Mr R. J. Murgatroyd: "A Note on the Contributions of Mean and Eddy Terms of the Momentum and Heat Balances of the Troposphere and Lower Stratosphere".

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Brigadier R. A. Lindsell and Dr W. R. S. Davidson: "Electrical Power for the Army in the Field".

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, London, WC2), at 5.30 p.m.—Dr A. C. Constantides: "Digital Filters".

MENTAL HEALTH RESEARCH FUND (at the Middlesex Hospital Medical School, Cleveland Street, London, W1), at 5.30 p.m.—Professor Paul E. Polani: "Chromosome Abnormalities in Mental Retardation and Mental Disorder".

UNIVERSITY OF LONDON (at the Institute of Psychiatry, Denmark Hill, London, SE5), at 5.30 p.m.—Dr P. H. Connell: "The Management of Heroin Addiction".

UNIVERSITY OF LONDON (in the Anatomy Lecture Theatre, University College London, Gower Street, London, WC1), at 5.30 p.m.—Professor R. Ceppellini: "The Genetics of Mental Trait".

INSTITUTION OF ELECTRONIC AND RADIO ENGINEERS, COMMUNICATIONS GROUP (at 9 Bedford Square, London, WC1), at 6 p.m.—Mr E. T. Wilson: "New Approach to HF Receiver Design".

SOCIETY OF ENVIRONMENTAL ENGINEERS, PACKAGING GROUP (in the Mechanical Engineering Department, Imperial College, London, SW7), at 6 p.m.—Mr F. B. Blader and Mr K. D. Ridler: "Errors in the Use of the Simple Shock Spectrum in Packaging".

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (at 17 Bloomsbury Square, London, WC1), at 7 p.m.—Mr A. D. Thornton-Jones: "The Changeover to the Metric System".

SOCIETY FOR ANALYTICAL CHEMISTRY, MIDLANDS SECTION; and ROYAL INSTITUTE OF CHEMISTRY, MIDLANDS SECTION (at the North Staffordshire College of Technology, Stoke-on-Trent), at 7.30 p.m.—Dr G. F. Reynolds: "Techniques in Electrophoresis".