

too many children for the working population to be able to afford to educate them in the way we would wish? This is just one example that could be extended to our other social services. We cannot hope to provide adequate facilities if the proportion of our non-productive population is too large.

Man by his cleverness has been able to control his environment in many ways. It seems little to ask that he should control his rate of breeding. We need a crusade for the two child family and the government could go a long way to encourage this. Nobody, least of all a biologist, is going to ask his fellow beings to forgo the pleasures of children. This is not necessary. Two children per adult female would go a long way towards stabilizing the population and may result in a rapid overall decrease. The advantages to the children would be enormous, for more of them would at least stand the chance of obtaining enough parental attention and care.

Yours faithfully,
PEGGY ELLIS

64 Blenheim Road,
Caversham,
Reading.

Leonid Meteor Shower

SIR,—I would like to refer to the article "Few Leonids Expected" (*Nature*, 224, 639; 1969). I had the wonderful experience of observing the Leonid meteor shower in November 1933 at Ste Radégonde near Tours, France, from the terrace of the Château de Chatenay. This was destroyed during the war, but owned until recently by the Reuter family of which several still living members observed the meteors with me during dinner time—around 8 p.m., on a beautiful clear evening, the exact date of which I cannot now confirm from my notes—November 17 being a definite possibility. The meteors came so fast that I, too, would venture to say that we saw 1,000 per minute, all coming from a vaguely north-easterly part of the sky falling southward. The phenomenon lasted so long that Mme Reuter—now long dead—insisted on our returning indoors to finish our meal, but there were still some meteors falling long after we had first noticed the shower, watched it for at least 10 minutes, returned indoors and went outside again after perhaps another 15 or even 20 minutes. I have never in all my life watched a similarly impressive natural phenomenon.

Yours faithfully,
ALFRED E. LAURENCE

92 Higher Drive,
Purley, Surrey, CR2 2HJ.

Cyclamates

SIR,—In the leading article in *Nature* (224, 298; 1969), we find the somewhat startling statement that the induction of chromosome breakage in leucocytes by cyclamates, though "ominous", is "... meaningless, because no one yet knows what harm, if any, damaged leucocyte chromosomes do". It may be true that no one knows precisely what harm chromosome breakage may do, but it is well known (see, for example, *Nature*, 217, 507; 1968) that mutagenic and carcinogenic agents frequently cause chromosome breakage. We should like to draw attention to a recent article by Logator *et al.* (*Science*, 165, 1139; 1969) which describes the induction of chromosome breaks in rat spermatogonial cells following injection of low doses (1 mg/kg over a 5 day period) of a cyclamate metabolite, cyclohexylamine. Oser *et al.* (*Nature*, 220, 178; 1968) summarize the evidence for the conversion of cyclamates to cyclohexylamine in man, and present new evidence for this conversion in rats. In either case, since mutagenicity and carcinogenicity are the questions under discussion, would it not be reckless to allow continued

consumption of cyclamates while further tests are being done?

Another leading article (*Nature*, 224, 398; 1969) claims that cyclamates caused no "recorded hurt" during 15 years' use. Even if careful studies had been performed on a possible relation between cyclamate consumption and human malignancy (which we doubt), we would ask if the production of "recorded hurt" to humans during 15 years' use is a valid criterion for the safety of cyclamates or any food additive. While we feel that it is evident to most of *Nature's* readers that this is not a valid criterion, it may not be so clear to readers of the lay press where accounts of this editorial have appeared. Nor, apparently, is it clear to the editors of *Nature*. Thus we feel bound to point out that it is extremely difficult to obtain convincing data on effects of food additives like cyclamates on human consumers. The reasons for this lie in the relatively low expected frequencies of induced tumours or mutations, and the likely long delay between exposure and effect, to say nothing of the difficulty of obtaining adequate controls. But low frequencies and long delays do not make the effects any less disastrous to those human guinea-pigs who are unfortunate enough to experience them.

We also note that *Nature* does not cite France as one of those countries that joined the anticyclamate bandwagon with precipitous and undignified haste. This is presumably because in that country the addition of cyclamates to food products has already been forbidden for some time. There was evidence in France at least 2 years ago of serious health hazards associated with cyclamates (see *Le Monde*, October 21, 1969). This evidence was not cited in *Nature's* editorial.

We would—with *Nature*—condemn US and British officials for the speed with which they reached their conclusions. But we would argue that these conclusions came 2 years too late. Perhaps there were some slow committees at work after all.

Yours faithfully,
W. A. ANDERSON
EDWARD N. BRODY

Institut de Biologie Moléculaire,
Université de Genève,
1121 Genève 4,
Switzerland.

The 15 years for which cyclamates have been used was cited in contrast to the week it took to ban them; it was in no way implied that the past record of cyclamates necessarily justifies their future use. Nor was it implied that cyclamates are necessarily safe but merely that toxicological evidence can often be hard to interpret and needs to be weighed carefully, not in a panic.—Editor, *Nature*.

University News

Professor A. M. Gleason has been appointed the Hollis professor of mathematics and natural philosophy at **Harvard University**. He succeeds Professor J. H. van Vleck, who has retired.

Professor F. M. Carpenter has been appointed the Fisher professor of natural history at **Harvard University** in succession to Professor P. A. Mangelsdorf.

The title of professor of endocrine physiology has been conferred on **Dr J. Lee**, in respect of his post at Charing Cross Hospital Medical School, **University of London**.

Appointments

Dr A. Baker has been appointed the first director of the **Hospital Advisory Service**. Dr Baker, previously at Banstead Hospital and St Mary Abbots Hospital, has for the past year been on secondment from the South-West Metropolitan Regional Hospital Board to the Department of Health and Social Security.

Announcements

Sir Eric Mensforth has been elected chairman of the **Council of Engineering Institutions** for 1970 in succession to **Sir Leonard Drucquer**, and **Sir Arnold Lindley** has been elected vice-chairman.

The **Drummond Prize**, an annual prize of £250, is to be awarded for research in the field of nutrition. The prize will be open to competition among people who have not reached the age of 35 by the closing date, and will be awarded for research undertaken by people normally resident in the UK, although research cited may have been carried out overseas. Details may be obtained from Mr D. S. Miller, Hon. Secretary, Nutrition Society, Queen Elizabeth College, London W8, to whom applications and nominations should be sent before January 14, 1970.

The **Plastics and Polymer Group** of the Society of Chemical Industry (SCI) awards an annual prize of £50 for the best paper on any aspect of pure or applied polymer science. The competition is open to all British subjects whether or not they are members of the SCI and to overseas members of the SCI. Further details may be obtained from Plastics and Polymer Group Prize, c/o Society of Chemical Industry, 14 Belgrave Square, London SW1, where entries should be sent before March 31, 1970.

The 1969 **Albert Lasker Award for Clinical Medical Research** has been awarded to **Dr G. C. Cotzias** (Brookhaven National Laboratory) for the research which led to the treatment of Parkinson's disease with L-DOPA. **Dr B. Merrifield** (the Rockefeller University) has been awarded the 1969 **Albert Lasker Award for Basic Medical Research** for his work on the synthesis of polypeptides and proteins.

The **Kalinga Prize** for the popularization of science, which is awarded each year by an international jury chosen by Unesco, has been awarded this year to **Sir Gavin de Beer**, formerly director of the British Museum (Natural History).

The **Lampitt Medal** of the Society of Chemical Industry, which is awarded every two or three years for services to the society, has been awarded to **Mr F. Gamble**, honorary secretary of the Canadian Section of the society.

The 1969 **John Gamble Kirkwood Medal**, which is awarded annually by the Yale department of chemistry and the New Haven section of the American Chemical Society, has been awarded to **Professor N. Bartlett**, University of California (Berkeley), for his discovery of new reactions of the rare, heavy gas xenon, which led him to synthesize the compound xenon fluoroplatinate.

ERRATUM. In the article "Distribution and Temperature of Interstellar Electron Gas" by A. H. Bridle and V. R. Venugopal (*Nature*, **224**, 545; 1969), in line 44 for " $\langle R \rangle = 0.011 \pm 0.03$ " read " $\langle R \rangle = 0.11 \pm 0.03$ ". In line 70, for " $\tau(10) = 0.010 \pm 0.02$ " read " $\tau(10) = 0.10 \pm 0.02$ ".

CORRIGENDUM. In the article "Observations on the Hydraulics of *Ascidia*" by I. Goodbody and E. R. Trueman (*Nature*, **224**, 85; 1969), line 18 in the sixth paragraph, "the mantle, the left side adjacent to the branchial sac" should read "the mantle, the right side adjacent to the branchial sac".

ERRATUM. We regret that in the article "Placenta Critics Placated" (*Nature*, **224**, 747; 1969) the name of Dr W. D. Billington was in several instances misspelt as Billingham. We apologize to him for the mistake.

British Diary

Monday, December 1

- Anniversary Meeting** (2.30 p.m.) Royal Society, at 6 Carlton House Terrace, London SW1.
- Development on Concorde** (7 p.m.) Mr H. Hill, Institution of Electrical Engineers, at the Royal Star, Maidstone, Kent.
- Education and Careers in the Rubber Industry** (8 p.m.) Institution of the Rubber Industry, at the Angel Hotel, Cardiff.
- In This World, Many Odours** (7.30 p.m.) Dr W. McCartney, British Society of Perfumers, at the Royal Society of Arts, John Adam Street, London WC2.
- Molecules** (2.30 p.m. Civil Service Lecture) Professor G. Porter, FRS, Royal Institution, at 21 Albemarle Street, London W1.
- Recent Advances in Electrochemistry** (6.30 p.m.) Professor G. Hills, Society of Chemical Industry, at 14 Belgrave Square, London SW1.
- The Systems Approach** (5.30 p.m.) Professor G. M. Jenkins, Institution of Electrical Engineers; the Institute of Measurement and Control, and the I.Mech.E., at Savoy Place, London WC2.
- Viral Hepatitis and Hepatitis Viruses** (1 p.m.) Professor A. P. Waterson, University of London, at the Royal Postgraduate Medical School, DuCane Road, London W12.

Tuesday, December 2

- Annual General Meeting and Scientific Papers** (2 p.m.) Society for Analytical Chemistry, Atomic Absorption Spectroscopy Group, at the Geological Society, Burlington House, Piccadilly, London W1.
- Quenched and Tempered Pressure Vessels** (whole-day discussion) Institution of Mechanical Engineers, at 1 Birdcage Walk, London SW1.
- Safety of Nuclear Power Stations** (1.20 p.m.) Dr J. Lewins, University of London, at University College London, Gower Street, London WC1.
- Statutory Requirements for Biological Substances of the B.P.** (6 p.m. informal discussion) Society for Analytical Chemistry, Biological Methods Group, at the "Feathers" Restaurant, Tudor Street, London EC4.
- Synaptic Transmission in the Central Nervous System** (5.30 p.m.) Dr J. Diamond, University of London, at the Institute of Child Health, Gullford Street, London WC1.
- The Design of Active Filters** (6 p.m.) Dr A. G. J. Holt, Institution of Electronic and Radio Engineers, at 9 Bedford Square, London WC1.
- The Specification of Fan Performance** (6 p.m. discussion) Institution of Mechanical Engineers, at 1 Birdcage Walk, London SW1.

Wednesday, December 3

- Advances in Hardware Components in Process Plants** (9.30 a.m. symposium) Institution of Chemical Engineers, at the University of Aston in Birmingham.
- Biological Rhythms** (7 p.m.) Prof F. A. Jenner, University of London, at the Institute of Neurology, The National Hospital, Queen Square, London WC1.
- Electrical Aspects of Spacecraft** (7.30 p.m.) Mr J. H. Sketch, Institution of Electrical Engineers, at Mullard Research Laboratories, Salfords, Redhill.
- Industrial Relations** (6 p.m.) The Rt Hon George Woodcock, CBE, Plastics Institute, at the Great Western Hotel, Paddington W2.
- Nuclear Methods in Trace Element Analysis** (7 p.m.) Mr A. A. Smales, Society for Analytical Chemistry; and the Royal Institute of Chemistry, at the College of Technology, Huddersfield.
- Photography in Engineering** (two-day conference) Institution of Mechanical Engineers; the I.Mech.E., and the Royal Photographic Society, at 1 Birdcage Walk, London SW1.
- Prospects for Future Developments in Ultrasonic Diagnostics** (whole-day meeting) British Institute of Radiology; and the Hospital Physicists Association, at 32 Welbeck Street, London W1.
- The Ceramic Colour Standards** (3 p.m.) Dr F. J. J. Clarke, Mr G. E. V. Lambert and Mr F. Malkin, Colour Group (Great Britain), in the Physics Building, Imperial College, London SW7.
- Your Choice—Careers Convention** (3.30 p.m.) Institution of Chemical Engineers, Graduates and Students Section, at University College London, Gower Street, London WC1.

Thursday, December 4

- Computer-Based Telemetry Systems for Distribution Management** (6 p.m.) Mr R. A. F. Smythers, Institution of Electronic and Radio Engineers, at 9 Bedford Square, London WC1.
- Emulsion Polymerization of Vinyl Acetate** (6.30 p.m.) Mr A. Laws, Oil and Colour Chemists' Association, at the Royal Turks Head Hotel, Grey Street, Newcastle upon Tyne.
- Field Application of Hermetic and Semi-Hermetic Compressors** (6 p.m.) Mr F. W. Harris, Institute of Refrigeration, at the National College for Heating, Ventilating, Refrigeration and Fan Engineering, Southwark Bridge Road, London, SE1.
- Lymphography** (5.45 p.m. discussion); **The British Institute of Radiology—Evaluating the Assets** (7.15 p.m.) Mr H. W. Grover, British Institute of Radiology, at 32 Welbeck Street, London W1.
- Practical Application of Computers to the Control of Chemical Plant** (6.30 p.m.) Mr E. I. Lowe, Institution of Chemical Engineers, at Widnes Technical College, Widnes.
- Regulation by Insulin of Protein and Amino-Acid Metabolism** (5.30 p.m.) Dr K. L. Manchester, University of London, at the Institute of Child Health, Gullford Street, London WC1.
- South American Triassic Reptiles, Gondwanaland** (5.30 p.m.) Professor A. S. Romer, in the Anatomy Theatre, University College London, Gower Street, London WC1.