correspondence

USSR bars Israeli scientist

SIR,—We wish to protest against the discriminatory practices of the Soviet Union towards Israeli scientists wishing to participate in international scientific meetings held in the USSR.

The Fourth International Meeting on Ferroelectricity (IMF-4) was held in Leningrad on 18-23 September 1977. The meeting was organised by the Academy of Sciences of the USSR under the sponsorship of the International Union of Pure and Applied Physics, the International Atomic Energy Agency, and the European Physical Society. We had both delivered papers at the Third International Meeting on Ferroelectricity in Edinburgh in 1973, and we were looking forward to participating in IMF-4. However, at every stage—soliciting information regarding the meeting, inquiring as to the status of our submitted manuscripts, attempting to obtain an entry visa to the USSR—we, and several other Israeli colleagues, encountered incredible obstacles, which ultimately led to our being unable to attend the meeting. Our individual experiences were as follows:

Sidney B. Lang submitted the abstract of a paper on 29 March 1977 to Professor G. Smolensky, Chairman of IMF-4 in Leningrad. Receipt of the abstract was never acknowledged, nor was information sent regarding the status of the paper. After seeking the assistance of Professors W. Cochran (University of Edinburgh) and W. J. Merz (R.C.A., Zurich), one of us (S.H.) received a letter from Professor Cochran, dated 30 June 1977, stating that he had received a cable from Professor Smolensky that the papers of Lang and Havlin had been accepted. Because of the impossibility of an Israeli receiving a visa to the USSR without first travelling to Western Europe, and lacking any official documentation from the Organising Committee that could be used in requesting a visa from Soviet embassies in Europe, Lang was forced to withdraw his paper on 25 August 1977. On 16 September 1977, two days before the meeting opened, Lang received the 'second circular' about the meeting, mailed from Romania on 30 August. This circular bore no date, but it specified a number of deadlines between 30 April and 18 June.

Shlomo Havlin submitted the abstract of a paper on 7 February to Pro-

fessor Smolensky and as in the case of Lang, heard nothing. On 8 July the Secretary General of IUPAP, in response to requests for assistance by the Israel Physical Society, cabled that Havlin's paper was included in the meeting programme, and that he need only apply to Intourist for an entry visa. On 9 August, Havlin arrived in Paris and immediately applied for a visa at the Intourist office. At every subsequent visit to the office as well as to the Soviet Embassy, he was assured that his visa would be issued "tomorrow". The seemingly sincere promise that the visa would surely be forthcoming led Havlin to remain in Paris beyond 8 September when he had planned leaving for Leningrad. On 11 September, still with no visa, Havlin realised there was no point in continuing his battle and left Paris.

Although the organisers of the Leningrad meeting had made firm promises to IUPAP, Professor Cochran, and Professor Merz, the Soviet authorities refused to issue a visa. From our experiences, it is obvious that Israeli attendance at this international meeting was prevented by the Soviet Union.

We suggest the following to our fellow physicists and to the officials of physics organisations:

- International organisations should not sponsor meetings in the USSR without firm guarantees from the Soviet government that these meetings will be open to citizens of all nations without exception. Promises from Soviet organising committees should not be accepted *in lieu* of official Soviet government commitments. Scientists should write to the officers of the physics organisations to which they belong, demanding that this principle be strictly adhered to.
- Scientists should refuse to attend meetings in the USSR unless they are certain that the Soviet government has, in fact, guaranteed that the meetings will be open to citizens of all nations without exception.
- Letters should be written to the Soviet organisers of IMF-4 protesting the discrimination that was practised towards Israeli scientists. The organisers were:

Chairman:

Professor G. Smolensky
A.F. Ioffe Physico-Technical Institute
Academy of Sciences of the USSR
Leningrad, 194021
USSR

Vice-Chairmen:

Professors L. Shuvalov and I. Zheludev
Institute of Crystallography
Academy of Sciences of the USSR
Moscow, 117333
USSR

We believe that the holding of meetings without firm adherence to the above principles is totally incompatible with the international character of science and scientific research.

SIDNEY B. LANG

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SHLOMO HAVLIN

*Bar-Ilan University,
Ramat-Gan, Israel*

Burying high-level wastes

SIR,—The disposal of intermediate and low level radioactive wastes in salt deposits of Permian (about 220 Myr) age is proceeding and proposals have been made to treat high level wastes in a similar fashion. When evaluating the suitability of these formations for this purpose, the proponents stress the antiquity, aseismicity and availability and conclude that they are "extremely stable" (*The Management of Radioactive Wastes*, IAEA, Vienna; 1977). Most geologists, however, would consider that rocks of this type are very unstable. Widespread halokinesis is well-documented and the role of diapirism in the formation of stratigraphic traps favourable for oil and gas accumulation is particularly significant.

In rocks containing potassium the radioactive decay of ^{40}K forms radiogenic ^{40}Ar , resulting in a high relative abundance of this isotope in the atmosphere. In early experiments designed to evaluate the possibility of using this decay scheme to measure geological time the ^{40}Ar concentrations in samples of evaporite were measured. In almost all cases it was found that significant argon loss had occurred. This was attributed to the instability of these strata and their susceptibility to dissolution by fluids (such as percolating ground water) and subsequent recrystallisation which had allowed the escape of ^{40}Ar . It is not usually possible to detect these effects by examination of the rocks in hand specimen or thin section. For instance, although Suess (1948), consulted "specialists for salt mines" his analyses demonstrated that

the samples he had been given had been recrystallised in recent times (Houtermans, F. G. in *Potassium-Argon Dating*, 5 Springer-Verlag; 1966). As a result the evaporite minerals have not subsequently been routinely employed for K-Ar dating.

The apparent ease of escape of radiogenic daughter isotopes from salt formations, particularly in recent times, and the alarming implications in the event of a containment failure, seem to require a thorough re-evaluation of the stability of these beds. Before any final decision on high-level radioactive waste disposal is reached, a systematic programme of argon measurements might provide a simple means of determining the extent of this phenomenon and enable its significance to be assessed.

R. M. MACINTYRE

University of Strathclyde, Glasgow

Alcohol in Britain

SIR,—J. A. Spring and D. H. Buss's account of three centuries of alcohol in the British diet (*Nature* 270, 567–72; 1977) gives good evidence for the high intake of beer in Britain in years gone by. But may I add a comment to the statement that "there are no obvious reasons" for the steady decline in beer consumption during the eighteenth century (p 567)? It is that the increase in tea-drinking in that period was very much greater than taxation figures suggest.

Genuine China tea remained expensive throughout, but a great deal of what was consumed was in fact adulterated with the dried and chemically treated leaves of such trees as hawthorn, sloe and ash (known in the trade as 'smouch'), or with used tealeaves purchased at small cost from the kitchen-maids of the wealthy. The cheapest teas contained little else.

Tea-drinking increased steadily during the century in all classes of society, especially among women. For the poorest families in the South and Midlands, there was a reason for this increase. Enclosure and the high cost of fuel deprived them of soups and the cheapest cuts of meat, which required long cooking. Crude tea without milk was the only warm comforting element in a diet that otherwise consisted of bread, cheese and occasionally cold, fat bacon.

The changeover from beer to tea as the common mealtime drink was well under way during the 1730s and 1740s. And in 1784 the high import duty on tea was at last lowered to a nominal sum on the grounds that "tea has become an economical substitute to the middle and lower classes of society for

malt liquor, the price of which renders it impossible for them to procure the quantity sufficient for them as their only drink".

C. ANNE WILSON

The Brotherton Library,
Leeds

Dietary lipids and heart disease

SIR,—May I point out some fallacies in Dr John Rivers' review (*Nature* 270, 2; 1977) of the so-called 'lipid hypothesis' of coronary heart disease (CHD)?

●The Finnish trial of Miettinen *et al* did show a notable decrease in mortality for males on a diet relatively high in poly-unsaturated fat. During the transcription of the mortality data from the original paper (Miettinen *et al*, *Lancet* 2, 837; 1972) to the article discussed by your reviewer (Mann, G., *N. Engl. J. Med.* 297, 646; 1977) an error was made which obscures the difference in mortality between the experimental and the control period ($32.00 + 2.84$ does not equal 38.84 !). It is disappointing that neither the editor of the *N. Engl. J. Med.* nor your correspondent noticed this.

●Unlike cigarette smoking, atmospheric pollution has not been shown to be an independent risk factor for CHD.

●Poly-unsaturated margarines do not necessarily contain *trans* fatty acids. The most popular Dutch brand of poly-unsaturated margarines contains 60 to 65% *cis-cis*-linoleic acid and 0% *trans* fatty acids. Its British equivalent ('Flora') has 6% of its fatty acids as *trans* isomers, which is similar to the proportion found in butter (data by courtesy of Unilever Research, Vlaardingen, The Netherlands).

●Epidemiological data overwhelmingly point in the direction of a relation between consumption of saturated fat and CHD (Keys A., *Atherosclerosis* 22, 149–192; 1975). The Masai are only a notable exception. Incidentally it should be stressed that cause-effect relationships cannot be proved or disproved by such comparisons between tropical and western populations, but only by controlled experiments.

●Few people with original or heretic ideas in the food-health field are finding it really difficult to obtain research funds or publicity. Dr Mann himself, as the recipient of a career investigatorship from the National Heart, Lung and Blood Institute, is a case in point.

Nutrition is a billion-dollar business, a favourite subject for the media and an almost religious pre-occupation for a large part of the public. In view of these pressures, scientists bear a heavy responsibility to keep their data straight. In my opinion neither Dr

Mann nor your correspondent have succeeded in this.

MARTIJN B. KATAN

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Intelligence is more than IQ

SIR,—I was interested in the letter by Brian J. Ford (5 January, page 7). I agree very fully with him of course, that the controversy is confused by the impossibility of obtaining measurements independent of cultural background. It is a great pity that so much more ink is being spilt in trying to prove that the heredity factor is unimportant, which for all I know may be true, than in the effort to raise all cultural backgrounds to an optimum level.

I would like to amplify Mr Ford's comment on the need for producing criteria which would reconcile mental measurements with the realities of life. What is practically accepted as intelligence depends to a very much more limited extent on IQ than is usually recognised. Thus IQ measurements often depend largely on the accurate understanding of the exact meanings of words and on the solving of logical problems. Solving real practical problems may often involve no language at all and in nearly all cases is concerned with the realities of a complicated situation rather than with the exact words by which this should be described. Furthermore the problems presented are unnatural in that the examinee knows that he has all the data required and that every datum is correct.

In real-life problems one never knows in advance whether one has all the necessary data and often is unsure whether the available data are right. Practical intelligence is therefore concerned with the judgement of whether sufficient data are available, with an understanding of how to obtain fresh data when necessary and then assessing the correctness or otherwise of the vital parts of the data available. This will involve persistence—in few practical situations must one solve 12 problems in 36 minutes—an ability to avoid prejudice, and some capacity for lateral thinking as well as IQ. Having satisfactorily solved all the practical problems the logical problem is nearly always trivial.

While a high IQ is valuable in a number of ways and probably has some correlation with the other factors I have mentioned, it is most unfortunate that it is so widely regarded as more important than it is, merely because it is so easy to put it in numerical terms.

J. H. FREMLIN

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