

fish, cereals and potatoes, as well as in some types of mushrooms and mussels. Both Danish and German researchers thought that the cadmium in foodstuffs came mainly from sewerage works through the use of the end product as fertilizer.

The European Commission has previously made strenuous efforts to dissuade the Swedes from making a sweeping ban on cadmium's industrial uses. The Swedish government is phasing out "unnecessary" uses of cadmium, but there are not as yet suitable substitutes for cadmium in its many industrial applications.

According to German Home Minister Gerhardt Baum, industry will either have to restrict its use or be faced with a legally enforced ban. The Commission's proposals, if they are finally adopted, will become national law in any case, but as they stand they only serve to protect the aquatic environment, falling short of the restrictions likely in Sweden and Germany.

Two other draft directives on discharge of chemicals into the aquatic environment are already with the council, one on mercury and the other on the "drins" (dieltrin, aldrin and endrin). Other directives are to follow but so far none have been adopted, because member states have failed to agree on limiting values and suitable environmental quality objectives.

The new directive on cadmium will add to the confusion, particularly as it is in two stages, to come into effect in 1983 and 1986, in recognition that the technology for removing cadmium from effluents has still to be developed. One major problem yet to be solved is how to remove cadmium from the wastes created during the manufacture of phosphoric acids from phosphate ore. So until a viable technique is developed, the restrictions will not apply to this industry.

**Jasper Becker**

## Soviet psychology

### IQ rehabilitated?

An article in the November/December issue of the Soviet Academy of Sciences publication *Psychological Journal* could pave the way for a controversial about-face by Soviet authorities on the issue of intelligence testing.

Stalin made IQ tests illegal in the Soviet Union in 1936. Before that, over-enthusiastic and under-qualified Russian educational psychologists, working with Western tests not standardized on the local population, had designated massive numbers of rural schoolchildren educationally subnormal — to the dismay and outrage of their parents and teachers.

The article in *Psychological Journal*, under the title "The evolution of cognitive processes and abilities", is likely to be especially influential because its author is Friedhard Klix, president of the International Union of Psychological Sciences and director of the psychology section of the Humboldt University, East Berlin. The

text formed the presidential address to the opening of the Eastern bloc's 22nd International Psychology Conference in Leipzig in July 1980.

The article stresses the need to treat human intelligence as a subject for study in exactly the same way as other biological phenomena. This is in itself a heresy, since Marxist-Leninist theoreticians have always stressed the need to avoid what they called "reductionism", particularly in relation to aspects of behaviour such as intelligence.

Klix places human intelligence firmly in a biological context and subject therefore to the laws of evolutionary genetics; thereby he accepts an indisputable element of heritability. He refers scathingly to the choice (carefully backdated in his example) that has always faced man in attempting to predict and control his own environment — that is, between adherence to a "cult" and the (scientific) alternative of methodical observation. The unspoken inference is that scientists must be allowed to work unhampered by the dogma of political theory.

Klix later refers (under cover of a paragraph concerned with Sumerian mathematical innovation) to recent experiments in his own university department aimed at pinpointing differences in performance between mathematically gifted children and "normals". The Soviet "ukaz" against objective testing, and in particular the prevention of the development of quantitative norms against which children with learning difficulties or exceptional gifts can be measured, is well known to Klix's audience.

Western observers feel that the demands of the Soviet-styled "scientific and technological revolution" may show that this prohibition works against rather than in favour of the very children whom it was intended to protect — selection for special education in one of the schools for gifted children at present depends on performance in one of the so-called "Olympiads". These events are held all over the country, but regularly return an embarrassing over-representation of urban males. The use of tests capable of revealing intelligence potential, uncrystallized by access to sophisticated teaching methods or the enriched cultural opportunities of the city, might restore balance to the selection process.

Klix ends by pointing out that the task before psychology is to achieve for cognitive processes what biochemists have managed in their microanalysis of other biological phenomena. Soviet psychological journals-watchers will be agog to see whether the debate on the "microanalysis" of human intelligence along the lines suggested by Klix is continued within the profession. At least the East Germans — who have been quietly using their own intelligence tests for selection for many years — have provided the Russians with an acceptable (that is, foreign) example on which to base the debate.

**Elizabeth Roberts**

## Orlov hunger strike

Dr Yuri Orlov, the Russian physicist, who is now serving a 7-year prison-camp sentence for his activities as chairman of the Moscow "Helsinki Monitoring Group", has gone on a hunger strike to coincide with the reconvening of the Madrid review conference last week. According to his wife, Irina, Dr Orlov made a similar protest last November, when the conference opened, although, during that month, he served two fifteen-day terms in the punishment cell after an alleged argument with a camp officer.



*Yurii Orlov — now a fast*

The Madrid Conference on Security and Cooperation in Europe opened last week with the prospect of two months of acrimonious debate (see *Nature* 29 January, p.343).

Dr Orlov's protest, said Irina, is an appeal to all governments represented at Madrid to grant amnesty to political prisoners and to reduce secrecy in the flow in all fields of information — social, economic and military.

So far, however, the Soviet Union seems unwilling to relax its restrictions on information flow. During the Madrid recess, two scientists, Aleksandr Lavut, a Moscow geologist, and Mark Niklus, an Estonian biologist, received sentences of 3 and 15 years respectively for publicizing abroad what they see as breaches of the Helsinki Accords on human rights. "Secrecy", too, is a frequent Soviet excuse for not allowing would-be emigrants to leave the country. The latest to be denied an exit visa on the grounds that he had had access to classified information, is Dr David Goldfarb, who until he resigned his post last year when filing his emigration application had been head of the Laboratory of Molecular Genetics of Bacteria and Bacteriophages of the Soviet Academy of Sciences.