

United Kingdom

No conclusion on low level lead hazards

A government report, published last week, has provoked strong criticism from the lobby demanding reductions in the amount of lead added to petrol. The report, *Lead and Health**, concludes that lead in air is not the most significant contributor to lead contamination in people: food and water are more important. "In the vast majority of the population", it says, "airborne lead, including that derived from petrol, is usually a minor contributor to the body burden".

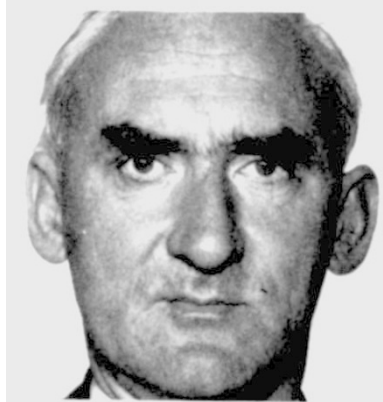
The working party on lead, set up in November 1979 under the Chairmanship of Professor P.J. Lawther, head of the MRC Toxicology Unit at St Bartholomew's Hospital, to prepare the report, concludes that it has only been able to satisfy one of the objectives required by its terms of reference — that of assessing the role of lead from petrol in relation to the other sources of lead in the environment. Its other aims — "to review the overall effects on health of environmental lead from all sources and, in particular, its effects on the health and development of children" — have been more difficult to achieve.

The toxicity of heavy exposure to lead is well known. The main controversy is over whether or not exposure to fairly low levels can effect health, especially the mental health of children. Several studies, in the US and Europe, suggest that children exposed to levels of lead which would not be high enough to result in the conventional signs of lead poisoning, have lower IQs and more behavioural problems than children who have not been exposed, or only very slightly.

The working party tried to meet the second part of its terms of reference by reviewing these studies. It concludes that there is no evidence of "deleterious effects at blood lead levels below about 35 $\mu\text{g}/\text{dl}$; neither is there any doubt about the serious consequence of blood lead levels above about 80 $\mu\text{g}/\text{dl}$; at intermediate concentrations, however, it says that the evidence is still very uncertain.

Many of the studies on the intelligence and behaviour of children are criticised in the report for not giving full details of their methodology. It says that in many of them, conflicting results have meant that the working party has not been able to come to any "clear conclusions concerning the effects of small amounts of lead on the intelligence, behaviour and performance of children". It recommends that further and more careful studies should be done: in particular better tests for examining intellectual function and behaviour in small groups of children are needed as is more research on the effects of pre-natal exposure on subsequent development.

Nevertheless, the report recommends



Professor P.J. Lawther, working party chairman

that children with blood lead levels above 35 $\mu\text{g}/\text{dl}$ should be followed up to identify the source of lead exposure.

Most cases of heavy contamination, the report concludes, are unlikely to result from exposure to unusually high concentrations of lead in air, although there will be local "hot spots" where airborne lead concentration are high and make a major contribution to overall body burden. Such areas should be identified and steps taken to minimise the hazard. The most likely sources of heavy exposure, however, are tap water, lead in paint and lead in imported cosmetics. The report recommends that a programme to detect lead in paint coatings accessible to young children be set up and that local authorities and water boards be encouraged to reduce lead in tap water in badly affected areas. The import and use of lead containing cosmetics should be discouraged, it says, and potential users should be made aware

of the hazard.

Other recommendations made by the report are the elimination of lead from manufactured foods — this is particularly a problem with canned foods — the development of guidelines for acceptable concentrations of lead in soil — more research also needs to be done on how plants take up lead from soil — and better education of the public on the hazards of lead especially to small children.

On the controversial topic of emissions of lead to the air from traffic, the report recommends that it should be progressively reduced and that the annual mean concentration of lead in air should be kept at less than 2 $\mu\text{g}/\text{m}^3$ in places where people spend a lot of time. Measures to achieve these limits may include "reduction of emissions, the relocation of industry or housing or traffic management schemes".

The report has been criticized by the anti-lead lobby. Parents Against Lead issued a statement at the time of the report's release saying that it had not taken into account evidence linking birth defects with lead contamination of the mother neither had it considered research already done showing that much of the lead in food comes from the air. To suggestions that the working party had been swayed by the oil industry, Professor Lawther said that each member of the party had their own scientific reputation to maintain and they had struggled to produce a fair scientific assessment of the subject.

Judy Redfearn

Lead and Health: the report of a DHSS Working Party on lead in the Environment HMSO £4.50

Dual support system for review

THE 'dual support' system whereby UK universities pay for buildings, services, technicians, basic laboratory equipment and salaries while research councils pay short-term grants for specific research is to be questioned by a new 7-man working party which will report ultimately to the Department of Education and Science.

The working party is "to review the current arrangements for the support of university research in the natural and social sciences". It is drawn from the Advisory Board for the Research Councils, which advises government on the allocation of the science budget among the research councils, and the University Grants Committee which provides universities with their basic running funds. The party will be chaired by Sir Alec Merrison, Chairman of the ABRC; other members include Dr Edward Parkes, Chairman of the UGC, and Sir Geoffrey Allen, Chairman of the Science Research Council (largest of the five research councils).

The feeling has been growing among the research councils that cut-backs in the UGC grant have fallen disproportionately on science, engineering, and medicine which through their laboratories have greater service requirements than the humanities. Applications to the research councils are increasingly including requests for equipment which would normally have been purchased through the university, and demands are increasing on research council central facilities (such as computers).

The working party will collect evidence, Sir Alec told *Nature* last week "and we can't rely on just a few scraps of information". On the other hand, the problem was too urgent to wait for the drafting and processing of a large questionnaire. The party "will not look at the total level of academic manpower" but will consider the problem of post-doctoral fellows and the provision of technicians.

"There is broad agreement that something is going wrong" with dual support

said Sir Alec. "We will have to balance saying something quickly with saying something reliable." The party hopes to report by the end of the year.

Meanwhile budgets for the research councils and the universities have fallen in real terms since 1978-9. Last week the UGC grant for the academic year 1980-1 was announced at £987 million, which says the Department of Education and Science "taking into account . . . the withdrawal of the subsidy for new overseas students . . . is about 2% lower in real terms than in 1979-80". The ABRC budget was also announced at £383 million for 1980-81 (see *Nature*, 3 April, page 000) with small increases for subsequent years, but these values are lower than those projected by the previous Labour government.

Jobs are also under pressure from these cuts, leading to a rapidly increasing average age for research groups; so it is hoped in some quarters that the terms of reference of the Merrison party will allow it to consider people as well as equipment.

● **EEC students to pay less:** The demand that foreign students must pay full tuition fees at British universities has been relaxed

for members of European Community countries, according to a report in *The Times*. This will increase pressure from Commonwealth countries (which account for half the UK's foreign students) that they also should get special treatment. The government is probably relying on the small number of EEC students in Britain remaining small, but, says *The Times*, it may have neglected the 3,500 Greek students who already outnumber EEC students. From 1981 Greece will be a member of the EEC and there may be an even greater inflow of students from the country.

● **£5 million for overseas student problem:** Mark Carlisle, Secretary of State for Education and Science, announced in the House of Commons last week that £5 million would be available in the academic year 1980-81 "to help ensure that uncertainty about prospective income from overseas students does not adversely affect selected postgraduate work of particular importance to this country". University sources last week had had no official indication of the meaning of this phrase.

Robert Walgate

Soviet Union

Academy stresses applied science

LAST November, Mr Brezhnev, in a major speech, charged the Soviet Academy of Sciences with greater responsibility for applied science and technology. Last month's annual general meeting of the Academy stressed that this new emphasis is well to the fore in its thinking.

How far this reflects a genuine change of direction is, of course, disputable. The Academy has already made it clear that it had been involved in applied research for some time before Brezhnev's speech. Nevertheless, the emphasis in this year's reports on the applied value of the Academy's work may be significant. President of the Academy Anatolii Aleksandrov, in his Presidential address, stressed particularly the work of the Shumyakin Institute of Bio-organic Chemistry, not only on protein structure, but also on genetic engineering, with, he implied, potential economic applications. He likewise commended the Academy's Institute of Microorganisms Biochemistry and Physiology for its work on artificial proteins for animal feed, based on oil products and natural gas, and in particular, the organic chemistry data bank established at Novosibirsk, which, he said, would enable scientists to develop new organic compounds with predetermined properties.

Physics and Geography Department of the Academy, Leonid Brekhovskikh outlined possible uses for the Soviet Union's glaciers and ice cover. His department, he said, had

devoted much time and resources to the study of glaciers as a fresh water source, since they contained "twice as much fresh water" as all the world's rivers and lakes. Ice could also, he said, be used as a building material in northern areas, when constructing port berths and laying roads.

From the newly exploited hinterland of the Baikul-Amur mainline railway, Academician Aleksandr Yanshin reported that after many years of forecasting and prospecting for potassium salts in Siberia, a major deposit, sufficient to ensure the "chemicalisation of agriculture in Siberia" had been located in the north of the Irkutsk *oblast*. While Academician Aleksandr Fokin, Deputy Chief Academic Secretary to the Presidium, in effect summarised the tone of the meeting by stating that great attention was being paid to links between research and production.

To carry out this massive programme, the meeting was told, Soviet funding for science had been raised by 55% during the past seven years (while the number of scientists actively involved in research had grown by 50% to 1,300,000).

In his Presidential address, Aleksandrov also stressed that, to solve such global problems as the search for new energy sources and the exploration of space, international cooperation was essential. He censured the US administration for curtailing Soviet-American scientific ties and exchanges.

Vera Rich

Soviet Union

Media accuses US of war-mongering

US allegations about a bacteriological warfare incident at Sverdlovsk were met by the Soviet Union not merely with protests that the US was attempting to wreck the Geneva review conference on bacteriological warfare, but also by counter-allegations that the US was preparing itself for chemical war. In a major media campaign, the Soviet Union has cited sources ranging from *Newsweek* to "documents of the Church of Scientology" to support claims that the US is amassing "wet-eye" (nerve gas) and "dry eye" (stable toxic agent) bombs, carrying out experiments with toxic chemicals on US citizens, building up twelve arsenals of nerve gas, bacteriological aerosols, narcotics, defoliants and herbicides, while working on a "new generation" of binary gas chemical weapon "causing death in a matter of split seconds".

Much of the radio material, in both Russian and English, was beamed at the Third World. Special emphasis was given to alleged CIA experiments on "coloured people" in order to test the vulnerability of different ethnic groups. And a whooping cough epidemic of the mid-1960s in Florida, which resulted in 12 deaths, was specifically attributed to the CIA.

Nor was Britain exempt from such charges — it was attacked for alleged work on bubonic plague virus (citing the *Daily Telegraph*, training in the use of toxins at the army staff college (a "recent British TV film") and the new firing range near Porton Down (*Now!*), "officially, being used to devise protection against chemical warfare").

A few days after Tass's accusation, in the "Russian for abroad" service of Moscow radio, that the US are working, in "top-secret military laboratories", to "cultivate bacteria which could cause mass epidemics like anthrax, typhoid, plague, smallpox, etc", it had to elaborate on the official explanation of the Sverdlovsk incident. It said it was an outbreak of anthrax, caused by "adverse weather conditions in the autumn-winter of 1978-79" (which made sheep and cattle susceptible to contagious diseases), lack of personal hygiene in tending livestock, and the purchase of unbranded meat, wool and hides from unauthorized individuals. In spite of the struggle against the disease, it was explained, anthrax has never been completely eradicated from the Urals — thereby unfortunately providing a weapon for the US hawks to "call into validity [the bacteriological weapons] convention" and to "whip up the arms race".

Vera Rich