

Environmental lead

British studies stress social factors

THE Department of the Environment announced last week that investigations by three major research groups have failed to detect statistically significant effects of lead on behaviour and intelligence of children in three British cities. The studies, which have not yet been published in full, are claimed to support the idea that any differences in behaviour between lead level groups are due to social factors that have not before been investigated in detail. The timing of the announcement and the interpretation placed on the results have been criticized by the Campaign for Lead-Free Air (CLEAR).

The studies were carried out at the Institute of Psychiatry, the Institute of Child Health and the University of Birmingham. All subjects had lead levels that are normal in Western societies and which fall within EEC reference levels. Two of the research groups originally found significant IQ deficits of 5 to 7 points in high lead groups, but these were reduced and became statistically insignificant when social factors were taken into account and sample sizes increased. The investigators see no inconsistency with previous US and West German research that suggests a negative correlation between IQ and lead levels in children from low income families: social factors were analysed in more detail in the new studies and American children appear to have higher lead levels than their British counterparts.

A spokesman for CLEAR accused the government of trying to defuse public reaction by issuing its statement before full details of the studies are available. CLEAR regards at least one of the new studies as supporting its case for a complete ban on lead in petrol (gasoline). The Department of the Environment says its statement was issued last week simply because the studies themselves were to be made public at a meeting of the British Psychological Society on 10 April.

Clear says the consistent residual differences in behaviour between groups with different levels of lead in their blood that have been found in most recent studies, especially in low-income groups, point to an overall association between lead levels in the body and IQ deficit. Professor Derek Bryce-Smith, a pioneer of the anti-lead campaign, has said that social effects cannot simply be removed from the analysis because the toxic effects of lead are known to interact with social variables. Ms Marjorie Smith of the Institute of Child Health, who worked on one of the studies, says this objection has been avoided in her analysis and that residual differences between groups are to be expected if all studies are "making the same mistakes".

The latest results will be influential in the debate over whether lead additives in petrol should be banned completely. The Royal

Commission on Environmental Pollution is due to report next week on lead pollution, and it is thought that the commission has been able to examine data from at least one of the latest studies. The British Government is already committed to reducing lead levels in petrol by the end of 1985, from the present maximum of 0.4 grammes per litre to 0.15 grammes per litre. A recent nationwide survey of population lead levels carried out under the European Community's screening programme found levels in Britain to be generally within reference levels, with the exceptions attributable to localized sources. But support is growing in the European Parliament for a total ban on lead in petrol sold in member states. Studies attempting to assess the proportion of lead in the body that is due to

petrol additives have produced estimates ranging from 10 per cent to more than 50 per cent. CLEAR says that blood level reductions in the United States and in Japan following statutory petrol lead reductions point to the higher figure.

If there is, as seems likely, pressure on the Government to reduce lead emission further, filters fitted in car exhaust systems could provide a practicable alternative to reducing lead content in fuel. Filters developed by Associated Octel, which manufactures lead additives for petrol, are claimed to reduce lead emissions by 70 to 80 per cent over a 50,000 miles working life. Figures produced by the Department of Transport show that a policy of fitting the filters, which contain steel wool coated with a layer of alumina, could be implemented about five years sooner than a policy requiring all new cars to run on lead-free petrol — and at lower cost.

Tim Beardsley

Arms control

Last week's developments

As a service to readers interested in arms control, and in the hope of not boring others with over-long articles on the subject, Nature will in the months ahead publish occasional summaries of the previous week's developments. The first follows.

THE log-jam in the working group on a treaty on chemical weapons has been broken by Soviet acceptance of the Canadian chairman, Mr Don McPhail. (Other working groups set up by the Geneva-based Committee on Disarmament remain hamstrung by disputes about chairmanships.) The British proposals on verification put forward last month are said to have been well received, but a response from the Soviet side is not expected for some weeks.

The report of the US bipartisan commission on MX siting, which has been widely leaked, is said to propose as an interim measure putting 100 MX missiles in as many strengthened Minuteman silos and to advocate the development of a smaller (and thus potentially mobile) single-warhead missile, called the Armadillo, for the longer term. The question whether Congress will agree to pay for the interim solution has been raised in Washington, together with the suggestion that a single-warhead missile would require that a strategic weapons treaty should be based on a count of warheads, not launchers.

The basis of the US Administration's proposals to the Strategic Arms Reduction Talks (Start) at Geneva, given to a congressional committee in Washington before Easter by the chief negotiator, Edward L. Rowny, have now become public. The United States is advocating a force of 850 strategic missiles on each side — the equivalent of a two-thirds reduction by the Soviet Union and a reduction of nearly a half by the United States. Nothing is known of the Soviet response.

Meanwhile, the US Administration's

decision not to insist on the "zero option" for the proposed treaty on intermediate-range nuclear missiles, widely welcomed by Western governments, has been rejected (at least in public) by the Soviet Union — most authoritatively by Mr Andrei Gromyko in Moscow on 3 April. The US proposal is that the Soviet force of SS20 missiles should be reduced to some number (unspecified) that would also be an upper limit to the number of Pershing II and cruise missiles to be deployed in Western Europe in the next three years. Mr Gromyko said during a televised press conference that the proposal was unacceptable because it would constrain Soviet deployment of SS20 missiles not aimed at Western Europe and because it left out of account the British and French nuclear missiles. Nothing was said about aircraft (in which the Soviet Union is thought to have a numerical advantage) nor about battlefield nuclear weapons (where NATO forces are thought to be better-equipped).

Reports persist that the US Administration considers a Soviet missile test on 8 February to be a violation of the Salt II agreement, which forbids the development of more than one further land-based strategic missile system, and that the issue will be raised in a speech by President Reagan in a few weeks. By then, Mr Reagan will know whether the Senate will let him have Dr Kenneth Adelman as director of the Arms Control and Disarmament Agency and whether the House of Representatives will have passed a resolution supporting a nuclear freeze proposal. □