daily forecasting. Two satellites also provide for redundancy. Scheuer says the Administration's cut will reduce the timeliness of forecasting and leave those parts of the world that are "neglected" by the rest of the system without any weather information at all when the remaining satellite breaks down — which happens often enough. Sometimes it takes a year to put a replacement for a broken satellite in orbit.

Finally, funds for the US contribution to the World Climate Program, a major international climatological effort run in cooperation with the World Meteorological Organization, have been cut from $1.8 million to $0.5 million.

Deborah Shapley

Lead in petrol

Clear risks

The British anti-lead lobby is flying high. Results now emerging from recent studies seem to be persuading scientific and medical opinion that the government should take further action on the lead content of petrol. Total elimination was advocated by many of the participants at an international conference organized last week by the Campaign for Lead Free Air (CLEAR).

Local councillors, civil servants and scientists from several countries heard evidence that children's IQ is impaired by low blood lead levels and that a significant contributor to lead burden is the lead in petrol. Des Wilson, chairman of CLEAR, is confident that the conference was given conclusive evidence that the position of the government is becoming increasingly isolated and untenable. The Lawther report, he said, had been completely discredited.

In 1980 a working party under the chairmanship of Professor P.J. Lawther advised that the evidence on danger from low blood lead levels was inconclusive. The Lawther working party also recommended that most effort be directed to reducing the lead in food and water, on the grounds that lead in petrol did not make the most significant contribution to the body lead burden.

The fear that blood lead concentrations of 300 $\mu g\ l^{-1}$ and below may have neurological effects represents a gradual shift of opinion over the past two years. The official government position is that harmful effects do not occur below 350 $\mu g\ l^{-1}$. The change of heart by the government which resulted in the decision last year to cut the legal amount of lead in petrol from 0.4 mg per litre to 0.15 mg per litre was in keeping with the Lawther case for a progressive reduction. Professor Lawther now says that the elimination of lead in petrol did not conflict with the findings of his working party and that "if there were damn all, nobody would be happier than me".

While there is no dispute about the toxic effects of lead at high levels, controversy persists about the level at which harmful effects occur. After the Lawther working party reported, two members, Dr Richard Lansdown and Dr William Yule of the Institute of Psychiatry and Great Ormond Street Hospital for Sick Children, produced results suggesting a link between blood lead levels and IQ performance in children of the London suburb of Greenwich and claimed a significant difference of IQ performance with blood lead above and below 120 $\mu g\ l^{-1}$ (*Devl Med. Child Neurol.* **23**, 567-576; 1981).

At last week's symposium, Yule and Lansdown gave new evidence (as yet unpublished) that children's behaviour is related to blood lead levels — 19 per cent of those with blood lead levels above the average (120 $\mu g\ l^{-1}$) were overactive compared with only 4.9 per cent of those with blood lead levels below the average. Bad conduct, nervous tension and lack of concentration increased with higher blood lead levels. Professor Herbert Needleman (Children's Hospital, Pittsburgh) also reported an association between classroom behaviour, IQ performance and lead burden.

Others say, however, that there should be extreme caution in moving from an observation of correlation between childhood lead exposure and impairment of intellectual development to postulating lead as the cause of extreme behavioural and psychological damage. The social environment is an extremely important factor in IQ performance.

The conference was also told of the significant contribution of lead in petrol to lead burden, making the Lawther estimate of 10 per cent seem too low. One recently completed study by the EEC Joint Research Centre at Ispra, Italy, suggests that as much as 30 per cent of the lead in blood is derived from petrol. The study determined the contribution of lead from petrol by relying on the known abnormal isotopic composition of lead in the petrol in one region of Italy. The conference also heard that in the United States in the four years since the phasing out of lead in petrol (1976–80), blood lead levels had fallen by 36.7 per cent. Dr Clair Patterson (California Institute of Technology) said that "exhausts from leaded gasolines are the most serious sources of lead in people".

While opinion is still divided and the need for further research acknowledged, Professor Michael Rutter (Institute of Psychiatry, London), a member of the Lawther committee, came down firmly in favour of the elimination of lead from petrol: "the level of probability is such that I think it is worth acting on".

CLEAR moves confidently into battle having already captured the support of the Labour party. The National Executive Committee pledged last month that a future Labour government would eliminate lead in petrol. CLEAR's sights are now set on the party conferences where it is confident of rallying support from the other opposition parties.

While much of the new evidence is not yet published, the Royal Commission on Environmental Pollution has now also launched an investigation into lead. It has heard evidence from the British Medical Association (BMA) supporting the link between low blood lead levels and impaired mental function. The BMA also appears to be convinced by the Ispra study.

The Royal Commission plans to investigate the sources of lead in the environment and its pathways to man. The commission also plans to "get to the bottom" of arguments about the technical and economic implications of reducing lead in petrol below that promised by the government last year. The commission may be confronted with strongly held opinions — Des Wilson described Associated Octel, the British company owned by Shell, BP, Chevron, Mobil and Texaco, which supplies the lead for petrol, as "the biggest mass child poisoners in the world today".

The oil companies say, however, that they will cooperate with the government if it calls for a ban on lead in petrol. The buck has now been passed.

Jane Wynn

Enter Exxon

New York

Cold Spring Harbor Laboratory on Long Island, New York, has agreed to a five-year "cooperative research agreement" with Exxon Research and Engineering Company. However, the financial terms of the deal are not being disclosed by Exxon, which is making its debut into the overcrowded world of biotechnology.

Under the terms of the agreement, up to six Exxon scientists will be assimilated into the Cold Spring Harbor staff to work full time on mutually agreed projects. In return, Cold Spring Harbor will select six postdoctoral fellows to participate in Exxon-funded research. In addition, Exxon's biosciences laboratory in New Jersey (which has never worked on molecular biology) may consult Cold Spring Harbor on various matters.

Exxon plans that its lawyers will visit the Cold Spring Harbor Laboratory regularly to keep abreast of latest developments. It will have exclusive rights to all patents derived from the research it funds, while Cold Spring Harbor Laboratory will retain rights to patents derived from work done by staff members not associated with Exxon projects.

Exxon will not ask those working on its Cold Spring Harbor Laboratory projects to defer publication of patentable inventions, as some industrial sponsors have requested of academic institutions relying on their funds.

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