



The bicentenary of the birth of the Victorian scientist David Brewster was celebrated last week in a one-day symposium held at the Royal Scottish Museum in Edinburgh. Brewster's main claim to fame was his invention of the kaleidoscope, but he also made important contributions to work on the polarization of light. He later became Principal of the Universities of both St Andrews and Edinburgh, and was a major force in the establishment of the British Association for the Advancement of Science.

in a certain "fashionable" mathematics and mechanics faculty, the ratio of applicants to places was only 1.2 compared with 19.0 in a similar trade institute.

The impression that applied projects now take precedence was reinforced by last month's award of state prizes for science and technology. The projects honoured included work on urban water supplies from underground sources, the enrichment of desert pastures, bone transplants for diseases of the jaw and the future development of the fuel and mineral deposits of the Kansk-Achinsk basin. Even an apparently theoretical study of high temperature plasma was, according to Professor Nikolai Arzhanikov, the secretary of the awarding committee, "a major contribution" to the development of thermonuclear power.

The yearly stocktaking of Soviet life and progress which follows the Revolution Day parade included extensive press discussions of how to accelerate the implementation of research results in Soviet industry. Dr Boris Paton, president of the Ukrainian Academy of Sciences, suggested that the concept of "implementation" might profitably be deemphasized and the stress placed on "cooperation" between science and industry. The distinction is not trivial; enterprises which have an active role in developing new technologies, rather than simply "implementing" the results produced by some research institute, will be eligible to share in major Soviet prizes.

Whatever the form of the link between science and industry, however, it ultimately depends on an appropriate supply of scientists and technologists. During the past decade, science planners have concentrated on linking universities

and technical institutes into regional "science centres" whose research, it has been urged, should serve the needs of local industry. Obraztsov's complaints of the plight of universities suggests that too little attention has been paid to their major function as teaching and training establishments.

Vera Rich

Clean air legislation

Forces massing

Washington

Indecision within the Reagan Administration about how to reform the Clean Air Act is playing directly into the hands of environmentalist groups and their congressional supporters who feel that the act should be strengthened rather than weakened. It is also upsetting industry groups who had looked to the new Administration to reduce the burden of environmental and health regulations.

The current law was passed in 1970, and must be renewed by the Senate before the end of the year. The debate on revising the law is regarded as the first major test of President Reagan's determination to pursue his election promises of regulatory reform.

Even some members of the Carter Administration have argued the need for significant changes in the act. Last week the Brookings Institution in Washington published a paper by economist Lester B. Lave and Dr Gilbert Omenn, previously associate director for health sciences in the Office of Science and Technology Policy, which is sharply critical of current air quality legislation.

Claiming that the main reason the

nation's air has become cleaner in recent years has been the switch to cleaner energy-producing fuels, Dr Lave and Dr Omenn propose that the act should consider individual differences in susceptibility, as well as the availability of personal preventative health measures, when determining the acceptable "remaining risk" resulting from the various levels of proposed controls.

Industry itself is pushing for even greater changes. Public utilities, for example, are strongly resisting efforts to write into the act significant extra controls on emissions from power stations aimed at reducing the problems of so-called "acid rain" formed when sulphur dioxide reacts with atmospheric moisture.

How much is eventually changed, however, depends largely on the results of debates within the Senate Environment and Public Works Committee. And so far the lack of a clear battle plan from the Administration has left the initiative with those fighting to maintain the status quo.

The level of permissible emissions from motor vehicles has been one of the most contentious parts of the 1970 legislation. At the time, Congress set tight numerical limits on automobile and other vehicle emissions, with a strict timetable for their implementation, although under pressure from the automobile industry the deadlines have been gradually put back.

In their report for the Brookings Institution, Dr Lave and Dr Omenn argue that Congress should not be involved in setting detailed regulations for motor vehicle emissions because of the unnecessary rigidity that results. Instead, they say, Congress should delegate more, although still retaining the oversight role.

The Senate committee does not agree. For example, Environmental Protection Agency (EPA) assistant administrator Kathleen Bennett told the committee that, because of the expense involved, the Administration proposed to lower from 90 to 60 per cent the reduction in truck hydrocarbon and carbon monoxide emission required by 1984. But Senator Gary Hart replied that the figure of 60 per cent had been "plucked from the air" and argued that EPA should not be making economic decisions on public health issues.

Within the Administration, much of the blame for the current disarray in EPA's strategy is being placed on Administrator Mrs Ann Gorsuch, who announced in August that she would not be seeking major changes in the act, but was rather pushing for the inclusion of several basic principles on which future regulation should be based (*Nature* 13 August, p.574). The result has been serious concern in several industries that the Administration is failing to fulfil its election promises. At the same time there is relief among Republican congressmen who already feel the worsening economic situation is jeopardizing their chances of re-election next year.

David Dickson