

support for fundamental research are essential if the problems of pollution are to be tackled efficiently. This is the message of a report published last week by an inter-council working party, which defines concisely the responsibilities of each council and proposes the establishment of a liaison group, to collate the research programmes of the councils and refocus their attention on neglected aspects of pollution.

Although pollution research comes under the auspices of all five councils, the Agricultural Research Council, the Medical Research Council and the Natural Environment Research Council inevitably support the bulk of the direct research (see Table). The report emphasizes, however, that the life blood of the research as a whole is the background, or indirect, research supported principally by the Science Research Council and the Social Science Research Council. The councils spend at least £1 million a year on research directly related to pollution, and a further £2 million on indirect but relevant research.

There are, of course, strong links already between the research councils and Government departments. Indeed, the direct research financed by the councils, being chiefly concerned with the long term effects of pollution, complements and enlarges the shorter term investigations of the Government laboratories.

The report is more concerned, however, with the areas of overlap between the councils and makes several proposals for more concerted action. Fundamental toxicology, public health and industrial pollution are three topics to which the SRC, for example, could contribute more by stimulating fundamental research. The report also points to a shortage of information about the effects of air pollution and to the lack of a focal point for research of this kind. This is a case, it says, for co-operation between the ARC, the NERC and the Government departments concerned with agriculture and forestry. Both the MRC and the NERC support research into the effects of heavy metals on the ecosystem, but links with the Government Chemist and other Govern-

ment laboratories should be nourished.

In an effort to promote concerted action by the research councils, a member of the headquarters staff of each council has been given special responsibility for pollution research. Each will be kept abreast of the relevant activities of his council and will be a member of the Inter-Council Liaison Group on Pollution.

ENERGY

Comeback for Coal

AFTER a period of plenty in world energy resources, Western Europe is entering a decade in which the continuing growth of demand for fuel, combined with the hard line now being taken by the authorities in many oil producing countries, will produce an increase in the price of fuel great enough to make the full utilization of coal reserves desirable and economically worthwhile. After the Suez crises, two effects helped to ensure the dominance of oil and natural gas as the prime sources of energy. At the same time as the United States reduced its importation of oil, a wave of exploration revealed new fields in the Middle East, Africa, Alaska, and even Europe. The plentiful supply of reasonably cheap oil led to a rundown of the coal industry in Britain and Western Europe which made economic sense in the short term, but which may have unpleasant consequences unless the trend away from coal can be reversed.

Today, the world consumption of fuel is 7,000 million tons of coal equivalent (mtce); by 1980 the demand may be as great as 12,000 mtce, and nuclear power is unlikely even to cope with the growth in demand, let alone usurp the role already played by conventional power stations (see *Nature*, **230**, 138; 1971). Yet during the period 1960 to 1970, the United Kingdom and the European Economic Community between them cut back annual production of coal by some 160 million tons. Now 60 per cent of the energy requirements of the EEC are met by imports, and even in the UK only just over half (56 per cent) of all fuel requirements is met from native resources.

The prospects for the future, presented in *Energy Resources for Western Europe* (Association for Coal in Europe, 1971; 75p), seem to depend heavily on how quickly the coal mining industry can be revived. Ironically, this most primitive form of fuel will, it seems, take the place which had once appeared to be reserved for nuclear power for at least ten years. After this period, nuclear power must become a dominant contributor if the estimates of a world demand for 25,000 mtce by the end of the century are to be met. So it

seems that the champions of the coal industry were right to raise their voices against the change to other fuels.

Parliament in Britain

Student Grants

ALTHOUGH maintenance grants to university students in residence at London, Oxford and Cambridge rose by more than 6 per cent between June and September 1970, by January 1971 the real value of the increase in terms of purchasing power had fallen to less than 2.5 per cent, said Mr William van Straubenzee in reply to a question from Mr Golding. The comparable figures for students at other universities were 5.6 per cent and less than 1.7 per cent. For resident students at colleges of education, the increase in the value of their grants has been almost completely eroded away by the decline in purchasing power. (Written answers, March 16.)

Cancer Research

A SCHEME of scientific interchange through which a member of the US National Institutes of Health will be seconded for some time to the headquarters of the Medical Research Council while a senior member of the MRC staff will visit the International Agency for Research in Cancer, Lyons, and various other centres, including NIH, will be the first tangible sign of the promised British co-operation in the international attempt to find a cure for cancer, said the Prime Minister. The cost will be met from MRC funds. Mrs Thatcher, Secretary of State for Education and Science, said that the MRC's direct expenditure on cancer research is currently £2,166 millions yearly. (Written answers, March 16.)

Exhaust Fumes

AFTER campaigning so imaginatively to prevent increases in the road fund tax, Sir Gerald Nabarro seems now to be in the vanguard of those who seek to protect the purity of the air. He asked what benefit to the health of the population, and in consequence what reduction in the nation's health bill, could be expected over ten years if £2,500 million or £150 per car were spent over the same period on devices to remove pollutants from the exhausts of motors. Mr Alison, Under-Secretary at the Department of Health and Social Security, was less enthusiastic. He said that although the possibility of undetected hazards could not be excluded, there was little to suggest any danger to health from street concentrations of motor fumes. It is impossible to say what improvement in health might result from removing pollutants from the fumes. (Written answers, March 16.)

Estimated Direct Expenditure on Major Types of Pollutants

TOPIC	ARC	MRC	NERC	SRC	SSRC	Total
General investigations	—	—	—	17	21	38
Organic wastes	48	—	69	9	—	126
Bacterial/viruses/spores	25	3	9	9	—	46
Pesticides	110	3	60	—	—	173
Oil	—	—	27	4	—	31
Particulates/hydrocarbons/dust	—	33	4	1	—	38
Noise	—	4	—	28	—	32
Radioactivity	13	272	—	—	—	285
Heavy metals/chemicals	2	26	32	—	—	60
Unclassified	—	168	20	6	—	194
Total	198	509	221	74	21	1,023

Figures are in thousands of pounds per annum, and refer to 1970-71.