

carbon monoxide can interfere with concentration and perception, so that a loss of efficiency may be hidden behind the lack of overt morbidity.

Naturally enough, the survey's chief recommendation is simply to get rid of smoke, an aim that can be achieved to a high degree by outlawing the domestic coal fire. Meanwhile research should be directed towards avoiding the damage from the gaseous pollutants, ideally by reducing the sulphur content of fuels, and towards discovering their more subtle interactions with vehicle exhausts and tobacco smoke.

BULGARIA

Homage to St Cyril

by our Soviet Correspondent

THE recent announcement that the Bulgarian government has awarded Academician M. Keldysh, president of the Soviet Academy of Sciences, the Order of Cyril and Methodius (1st Class) for his services to science, seems somewhat symbolic of the whole background of the Bulgarian Academy of Sciences, which is now celebrating its centenary. On the one hand, there is the long academic tradition, symbolized by the Order named after the ninth-century "Apostles of the Slavs", who evangelized Bulgaria and formulated the Cyrillic alphabet, and on the other, the strong ties of modern Bulgarian scholarship with Russian traditions.

For, although founded in émigré conditions (Bulgaria being then under Ottoman rule), without the royal or governmental patronage under which such academies are normally born, the Bulgarian Literary Society (as it was then known) early established close and continuous links with the scientific establishments of the then Russian empire, notably with the Imperial Academy of Sciences of St Petersburg (now the Academy of Sciences of the USSR). And, over the last twenty-five years, the Bulgarian Academy has been remodelled. In the words of its vice-president, Academician Vladimir Georgiev (in his centenary address), it became "an institution of a socialist type, with specialized institutes and laboratories, which greatly broadened its field of activity".

The Bulgarian Academy of Sciences, in fact, now comprises ten departments, some fifty research institutes, as well as a number of other specialized centres, a number of which have been endowed by the Soviet Union which, for example, built the atomic pile at the Institute of Physics. The publications of the academy number sixty-three original journals and serial publications and three abstract bulletins.

In spite of its close links with the academies of the Soviet Union and other Eastern European countries, the Bulgarian Academy of Sciences has established several distinctive fields of research. The Institute for Organic Chemistry has recently obtained some most interesting results on the structure of new alkaloids isolated from Bulgarian-grown plants. The Division of Metallurgical Science and the Technology of Metals is engaged on a vast R and D project on the development and application of new alloys, based on the metals already produced by the Bulgarian metallurgical industry and the mineral resources of Bulgaria. The considerable bias placed by the Geophysical Institute on research in seismology is not unconnected with the fact that Bulgaria lies in the Balkan seismic zone.

Yet, in spite of this bias towards national conditions

and problems, the Bulgarian Academy of Sciences has progressed far beyond its original aim of "disseminating general knowledge among the Bulgarian people and showing them the path to prosperity". Recent achievements of international significance include the formulation of new algorithmic languages (notably ALGAMS), the development of the "ferrograph" device for measuring the rectangular hysteresis curves of ferrite cores, the development of apparatus for measuring electron paramagnetic resonance, a new and more sensitive method for the rapid registration of the mass numbers of gases and vapours *in vacuo*, investigation of the D-layer of the ionosphere, chemistry of monomers and high polymers, microminiaturization of electronics and integrated circuits and other topics of contemporary interest.

The centenary celebrations of the academy began in October 1969, and will continue through the academic year, concluding with an international psychological conference to be held in the Black Sea resort town of Varna in September.

WATER RESOURCES

More Reservoirs for the North

A BARRAGE across the Solway Firth for estuarine storage of water will not be an economic proposition in the foreseeable future, according to the Water Resources Board (*Sixth Annual Report of the Water Resources Board*, HMSO, 10s; *Water Resources in the North*, HMSO, £1 16s). Instead, water supplies for the north-east of England should be met adequately during the next thirty years by one or two additional inland reservoirs which, the board says, will be nearer the centres of demand, and will be more acceptable aesthetically than a construction in the Solway Firth.

To meet the demands for water in the rest of the north of England in the period 1981 to 2001, the board suggests that the choice lies between more inland reservoirs (four or five), and water storage in Morecambe Bay or the Dec Estuary, or both. But this choice, it says, must be made in 1971 or 1972, and it urges that there should be further investigations soon of inland sites suitable for reservoirs. Two or three such sites may be required as early as 1976 or 1977, but the board does not see its scheme for augmenting water resources in the north becoming fully operative until 1981 at the earliest. The final choice will, of course, depend to a large extent on the results of the Morecambe Bay and Dec Estuary studies. Both studies are past the half-way stage, and final reports are expected in 1971. Progress on the third barrage being considered by the board, that across the Wash in the east of England, is not as advanced, but the board hopes to receive shortly the consulting engineers' report on the desk study which has been under investigation since 1968.

While the board believes that estuarine barrages and more inland reservoirs are necessary to meet all the future demands for water in England and Wales, much more will depend, it says, on the proper management of water after it has been used. The board would therefore like to see the sewage authorities reduced in number and made more efficient, their work planned and coordinated on a national scale, and the board's functions extended to cover the disposal of water after use so that it could have control over all aspects of water management.