

## ANTARCTIC ICE

**Traces of Dust**

SAMPLES of ice collected from an area near the British Antarctic Survey Base in Halley Bay are being brought back for study in Britain. The study, carried out by a team from the University of Bristol, will help in the investigation of how pollutants spread around the Earth, and might eventually produce traces of extra-terrestrial dust. As a rehearsal for the project, foot cubes of snow were collected by members of earlier expeditions stationed in Halley Bay but, for the first time, a geochemist, Mr David Peel, has visited the region for the express purpose of gathering snow and ice samples for analysis at his home laboratory.

The samples collected in the rehearsal were packed into tin boxes and kept under refrigeration until they could be studied in dust free conditions at Bath University. A preliminary analysis by Dr D. Parkin and his colleagues involved trimming the ice blocks with a hot wire knife before allowing the uncontaminated interiors to melt in clean containers. A mere 0.1 µg of wind-borne dust was found in an initial mass of 70 kg of ice. No particles greater than one micron in diameter were found, and this very small amount of possible wind blown dust suggests that efforts being made by Professor E. Picciotto of Brussels University to detect extraterrestrial dust in polar ice samples, may not go unrewarded.

For the more detailed study now planned, about a thousand kilogrammes of ice will be taken from sites along a path inland from Halley Bay. At Bristol, some of this sample will be studied for evidence of organic debris and pollutants such as DDT and lead. Because the samples are taken in the form of slabs at different levels down the walls of trenches dug in the ice, some indication of the change in pollutant content over the years should emerge from the study. Mr Peel

is also carrying out on-the-spot analysis with a gas chromatograph, and some of the laboratory work will again be carried out by Dr Parkin's group in Bath.

The expedition is under the overall supervision of the Scott Polar Research Institute in Cambridge. As the onset of the Antarctic winter makes the Halley Bay region inaccessible to ships after February, Mr Peel and his samples will shortly be leaving the Antarctic, and should be back in Britain by April or May.

## RUSSIA

**Collective Science**

from our Soviet Correspondent

FOLLOWING the adoption of the new Five Year Plan and the new state budget by the Supreme Soviet (see *Nature*, 228, 1130; 1970), concrete measures to implement the plan are now being announced. Particularly emphasized is the position of the Soviet Union in the "scientific and technological competition with the capitalist world" (*Pravda*, 29 December, 1970) and, accordingly, many of the measures announced are of a practical and technical nature, such as the proposed introduction of more than 600 new types of "machines, instruments, equipment and materials" in 1971.

Some more general measures are also foreseen. The organization of "collectives" of scientists to deal with individual problems of the national economy is to be intensified. These are to be based in particular in Moscow, Leningrad, Ukraine and Byelorussia. The Siberian branch of the Academy of Sciences and the All-Union Academy of Medical Sciences will also play a leading part in the work of these collectives. One of the largest such groups already in existence is that of the Donbass, in which scientists from no less than 76 institutes and technical colleges take part.

Although the percentage expenditure

on "education, science and culture" in the new budget has decreased from 16.2 to 16 per cent, the absolute expenditure on higher education is to be slightly greater in 1971. A number of new institutes and colleges are planned, chiefly in Ukraine, and in the expanding areas of Siberia and the Urals.

## FLOODING

**Yorkshire's History**

FLOODING of the rivers in Yorkshire is such a relatively common feature that there should be a concerted long term programme in any area of urban renewal to widen the course of the River Wharf or the River Ouse. That is the conclusion reached by Mr J. Radley and Mr C. Simms, joint authors of a historical survey of Yorkshire flooding from the fourteenth century to the present (*Yorkshire Flooding*, William Sessions, 10s). They also believe that there is a good case for establishing a wildfowl refuge in the lower reaches of the rivers Ouse and Derwent, to protect the varieties of wild-life attracted to the flooded areas.

The survey is an interesting account of the way in which urban and agricultural development has affected the pattern of flooding in the Yorkshire rivers. Dredging, straightening and embanking of the natural waterways have helped to canalize floods so that they run off seawards, but one result of flood banking is that the return of flood waters into the rivers by natural means is often an impossibility. The net result of these developments, according to the authors of the survey, is that the variety of the massive floods that were witnessed in the past are no longer experienced, but they warn that there will be an increasing number of major floods as the drainage of catchment areas is perfected.

In the Vale of York, the most densely populated area liable to flooding discussed in the report, the chief culprits are snow melt, aggravated by frozen soil, and, in the summer, violent thunderstorms following a wet period. These factors have resulted in major flooding of the Ouse in 1929, 1932, 1933, and especially 1947, but none of these compare with the great floods witnessed in the fifteenth and sixteenth centuries. In 1625, for example, the River Ouse burst its banks, reached its highest mark ever on the York City wall, and flooded a large area of the vale. Floods in the Vale of York tend to be particularly frequent and unexpected because the flood may come down one or any combination of rivers feeding into the vale. One result of these constant changes in the water table is that the foundations of York Minster have been made very unsafe. In 1968, water entered 150 buildings, including a hotel designed to keep essential services above the flood.

## PHYSICS

**Heisenberg Retires**

from a Correspondent

PROFESSOR WERNER HEISENBERG, at a ceremony in Munich last month, formally relinquished his directorship of the Max-Planck Institute for Physics, after nearly thirty years in office. Addressing members of the Institute, Professor A. Butenandt, President of the Max-Planck Gesellschaft, said that although difficulties in finding a successor to Professor Heisenberg have not been resolved, this does not reflect any indecision about the future role of the Institute for Physics. Overall direction of the scientific programme of the institute will be undertaken temporarily by Professor H. P. Dürr, with Professor L. Biermann in administrative charge of the several subsidiary institutes.

Professor Dürr, said that particle physics will continue to spearhead the Institute's research programme, and he emphasized the need for an even more integrated research effort, with closer experimental-theoretical cooperation in the central institute, furthered by a new "phenomenological group". There will be the fullest possible cooperation with CERN and other outside bodies and the amount of remote data analysis carried out in Munich can be expected to increase.