

USSR

● The raising of quality standards is a major watchword of the current Five-Year Plan and a slogan for the forthcoming celebrations of the Diamond Jubilee of the Soviet Union. In the traditional panegyric of Soviet achievements given on Lenin's birthday (22 April), Mikhail Zimyanin, Secretary of the Central Committee of the Communist Party of the Soviet Union, noted among other achievements an improvement in the quality and efficiency of research and the coordinated study and solution of problems of scientific and technological progress. A major re-equipping of industry is under way, he said, and in spite of "difficult weather conditions" the last year has been marked by "new outstanding achievements of the Leninist agricultural policy of the Party".

Nevertheless, in at least some of the Union Republics, there is less emphasis on the implementation of the plans. In Lithuania, according to the First Secretary of the Central Committee of the Lithuanian Communist Party, there is a tendency for certain ministries and departments to draw up "easy" plans and adjust the targets downwards. The First Secretary of the Central Committee of the Byelorussian Communist Party, speaking at the recent Plenum, told a somewhat similar story. Some bodies including research institutes and the state statistical organs, he alleged, keep up a front of activity, busying themselves with data-gathering and the preparation of summaries rather than with the "scientifically substantiated recommendations" which the economy requires; even when recommendations were made, the proper experimental basis might be lacking.

He cited in particular a new system of product quality control for dairy farms which was recently worked out by the Byelorussian Scientific Research Institute of Agricultural Economics and Organisation and which has been widely publicised. However, the whole experimental basis of the scheme apparently rests on "a brief experiment on only one farm", reflecting a lack of practical trials reminiscent of the extremely scanty foundation for Lysenko's "vernalisation" scheme. Although not criticising in so many words the system of targets which is the basis of Soviet planning, the Byelorussian first secretary deplored the tendency to set targets without proper evaluation of the "qualitative parameters of economic development".

● The Dubna Joint Institute for

Nuclear Research has completed a cycle of experiments on the synthesis of element 107 by bombarding ^{209}Bi with nuclei of ^{54}Cr . The first experiments, in 1975, gave strong evidence of the formation of the element with a half-life of 2 milliseconds. The Dubna team, under Academician Georgii Flerov, has already syn-



thesised elements 103–106. In announcing the successful conclusion of the current series of tests, Academician Flerov gave a strong hint that they now would be aiming at elements of even higher atomic numbers—a new unit is being built, he said, which will increase the efficiency of nuclear interactions by a factor of several hundred.

● One of the major features of recent Soviet work in the Antarctic has been the drilling of deep cores both through the ice-shelf and on the continent proper. A special electrothermal core drill is used, with a maximum penetration of 6 metres an hour with, when necessary, a special system for keeping the core sterile. All apparatus is easily transportable by sledge or helicopter, hence cores may be taken if required at a considerable distance from the base.

The ice-shelf project was based on the Novolazarevskaya station (Queen Maud Land). The purpose of the experiment was not simply to penetrate the ice but also to sample the sea-water and sea-bed below. The first such shafts gave the depth of water beneath the ice as 40 m, its salinity approximately that of the open ocean and its temperature -1.5°C to -1.9°C . The sea-bed specimens indicated that the composition of diatoms deposited had not

changed during the past 10,000 years.

Inland drilling operations were based on the Vostok station at the 'Pole of Cold', where the icecap is some 3,500 m thick. A 980 m core from this area has been analysed by the ^{18}O method. According to Professor Evgenii Korotkevich, who is one of the supervisors of this project, the core indicates a palaeo-climatic pattern with a mean annual temperature at 15,000 B.P. some 5° below the present figure, indicating a significant drop in the world temperature. This, he says, was followed by "rapid reconstruction" of the climate, thought to be associated with cosmic phenomena, with the present climatic conditions becoming established *circa* 11,000 B.P., since when the climate has remained virtually unchanged.

The Vostok station is also the base for taking sterile cores for experiments on the 'reanimation' of microorganisms. The cores from the twentieth expedition (Summer 1975–76) penetrated to 207 m, the most ancient organisms reanimated being from the 197 m level ($\sim 8,500$ B.P.). From the specimens of the twenty-second expedition (Summer 1976–77), it is hoped to establish the limit of survival of microorganisms in the anabiotic state, a topic, it is said, in which the Laboratory of Space Microbiology of the Microbiological Institute of the Soviet Academy of Sciences is showing considerable interest.

● The case of Anatolii Shcharanskii, at present under arrest pending investigation, is a peculiarly ironic example of the 'secrecy' issue which faces scientists wishing to emigrate to Israel. Shcharanskii, who is prominent both in Jewish refusenik circles and in the larger human rights movement (he is a member of the banned Helsinki monitoring group), studied at the Moscow Institute of Physics, specialising in computer science. He has not, however, ever worked at his profession.

Because the research post he was offered at the Physics Institute of the Academy of Sciences could conceivably have been considered as 'classified', thereby threatening his chances of emigration, he denied himself the possibility of creative work in his own field and was employed as an engineer. The latest Tass allegation that Shcharanskii has been organising the collection of classified information to send "abroad" thus adds a bitter twist to his story.

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