

OLD WORLD

EUROPEAN LABORATORY

ESRIN in Trouble

A PROPOSAL to close down the European Space Research Institute (ESRIN) is widely regarded as a setback to the cause of European collaboration. The laboratory is one of several established by the European Space Research Organization. It was originally intended as a centre for fundamental research relevant to ESRO's activities in space, and has been particularly concerned with plasma physics. If a resolution introduced at the ESRO council meeting in July should be adopted in November, the laboratory will be run down in 1972 and 1973.

The ESRIN laboratory is at Frascati, south of Rome. It has a permanent staff of about 70 and an annual budget of \$2 million. In the past months, the institute has attracted a steady stream of visitors who add about a dozen to the professional complement. The director of the institute, Dr Nicola D'Angelo, succeeded Dr H. L. Jordan in 1970. He is thought to have received many expressions of support in the past few weeks, especially from university scientists, but there are fears that these may not be sufficient to distract ESRO from its present preoccupation with applications satellites.

Apart from purely budgetary considerations, it is possible that ESRIN has been threatened because the work it does might just as well be done in universities, although one of those involved says that the institute was originally set up to tackle problems beyond the reach of university departments, and much of its equipment reflects this intention. Evidently the peripheral role of ESRIN within ESRO has weakened its claim on public funds, but its supporters claim that it is one of the few examples of an international laboratory which has been an entire success.

Present and former members of ESRO complain that it will be a great waste if the laboratory is closed down just when it has been built up to full strength. Younger scientists who have recently left apparently secure positions in their own countries to work at an international laboratory are likely to be left with a great sense of frustration. Investment in ESRIN so far amounts to \$10 million. The annual running cost is 2.5 per cent of ESRO's total budget of \$80 million. Although it may be held that ESRIN was not strictly necessary, closing it down is certain to be widely regarded as a setback.

DETERGENTS

Phosphates to Stay?

COMFORTING remarks about the effects of detergents on the environment have become a feature of the annual reports of Procter and Gamble Ltd. In a special section in the report for 1970-71, the company says, for example, that the work carried out in Procter and Gamble's laboratories on enzyme washing powders shows that they are "safe for consumer use" and it quotes the British Government's Standing Technical Committee on Synthetic Detergents as support for its contention that enzyme detergents do not pose any problems in rivers or in sewage works (*Twelfth Progress Report of the Standing Technical Committee on Synthetic Detergents*, HMSO, 1971; £0.22½).

As far as phosphate residues are concerned, the Procter and Gamble report again quotes the Standing Technical Committee and says that it is wrong to assume that the eutrophication problems experienced in the United States are applicable in Britain. In the United States, much more sewage is discharged into lakes where there is little water movement and the largest single cause of eutrophication is thought to be compounds such as sodium tripolyphosphate which are included in detergents as water softeners and emulsifying agents. A recommendation by a United States congressional committee in April 1970 sent detergent manufacturers hurrying off to develop alternatives, but three government agencies last week declared in favour of phosphates because they seem to be less of a hazard than some of the substitutes, such as sodium nitrilotriacetate, about which there are still unresolved doubts on health grounds (*Nature*, 233, 229; 1971).

According to the Water Pollution Research Laboratory at Stevenage, only 46 per cent of the phosphate content of sewage in Britain is in any case attributable to detergents, the remainder arising from human excreta and from industrial effluents (chiefly from metal finishing processes). Only about 70 per cent of the phosphate content of detergents could be replaced without seriously impairing the detergent function, so the advantage to be gained from the introduction of other compounds—whose properties are relatively unknown—would only be a decrease of about 30 per cent in the proportion of phosphate in sewage. It looks as though phosphate detergents are here to stay, at any rate until the alternatives have been proved to be safer.

The report of the Standing Technical Committee also says that even if phosphate-free detergents were manufactured in Britain, it is unlikely that the growth of algae would be very much inhibited.

INTELLIGENCE

Who Watches Whom?

from a Special Correspondent

THE first international conference on Communication with Extraterrestrial Intelligence on this planet was held at the Byurakan Observatory in Soviet Armenia from September 5 to 11. A joint project of the US and USSR Academies of Sciences, the conference was attended by fifty-six official delegates with one representative from each of Czechoslovakia, Hungary and the United Kingdom. There were present not only astronomers and communications experts, but biologists, historians, anthropologists, linguists and others, including two Nobel laureates, Charles Townes and Francis Crick. The subject, once treated as a bemusing speculation, is increasingly respectable.

At the symposium, much attention was given to the abundance of technical civilizations in space. Some old uncertainties were disposed of. In particular, the neurophysiologists painted a clear picture showing that one should expect everywhere the development of a complex central nervous system leading to an intelligent brain. The historians showed that this in turn leads to a highly systematized and organized society which inevitably develops technology. Ignorance in key areas, however, haunted the discussion. Although the first steps in the evolution of complex organic molecules from the simple molecules of the primitive planetary atmospheres have now been traced, these experiments have not come close to producing the key molecules of contemporary life such as DNA, and have not demonstrated that the development of such molecules is inevitable. The uncertainty prevents the transfer of the origins of life from the realm of miracles to that of statistics, to paraphrase Philip Morrison. We fall back on subjective probabilities of great uncertainty.

The abundance of detectable civilizations should be proportional to their longevity as power emitting entities. Fears have grown that civilizations only slightly ahead of those on this Earth will be so good at conserving energy that there is none wasted for us to detect. Indeed, it may be possible to detect only those that want to help us, and even those may be few; as Carl Sagan put it, they may have little interest in conversing with a species as antique, in their view, as we are. Compounding the probabilities, both statistical and subjective, the feeling developed that it was probably thousands of light years to the nearest detectable civilization.

It was noted that we might first detect other civilizations through evidence of astro-engineering activities such as the