NORTH AMERICA

What will Follow Dr Hornig ?

THE announcement last week that Dr Donald Hornig is to resign his post at the Office of Science and Technology on January 20 and is to take up an executive job with Eastman-Kodak is a timely reminder that the new Administration will soon have to make a series of important decisions about the administration of science policy in the United States. At this stage, it is by no means clear just what Mr Nixon and his colleagues should do. In the past six years, the Office of Science and Technology has acquired great prestige and influence but has also accumulated a growing number of critics. Dr Hornig's tenure of the office of the President's Special Adviser on Science and Technology, coupled with the directorship of the Office of Science and Technology, has been competent if unspectacular. If anything, Dr Hornig has had much more the image of the Administration's man than did his predecessor, Dr Jerome Wiesner, but that was probably inevitable given the personalities of Dr Wiesner and President Johnson. Dr Hornig can boast of a few notable achievements, among which the finding of a site for the 200 GeV accelerator is as important as any. It is also creditable that he was able to restrain some of his colleagues from their wilder schemes for the central management of the scientific literature. On the other hand, he did allow himself to be caught up in the wild goose chase to identify, describe and possibly to cure what is fashionably known as the technology gap. In the same spirit, he allowed the Administration to run to excess in public statements on oceanography, and in the past few months has been unable to defend the National Science Foundation from the harshness of the recent budget cuts. The way things have been going in the past year or so, Dr Hornig will undoubtedly be glad to be back in Rochester very soon.

The question remains of what should happen to the Office of Science and Technology and the complex of advisory bodies which has grown up around it. It serves no useful purpose, at this stage, to conceal the anomalies which have grown up over the past ten years or so. A great many of these were fully described in the report prepared in 1967 by the Library of Congress for the Committee on Government Operations in the House of Representatives. One of the most obvious troubles stems from the way in which the OST, placed as it is within the White House, is by turns adviser to the President and arbiter of disputes between the agencies. Congress is always seeking to make the OST more effective in the sense of being more able to undertake executive functions as part of the Administration, but Dr Hornig and his predecessors have resolutely sought to avoid commitments like these. Unfortunately, however, the strictly advisory function which the OST seeks for itself is frequently compromised when it has to undertake specific tasks on behalf of the Administration. One of the questions now to be decided is whether the OST should become more strictly an advisory body, helping with the formulation of policy at the highest levels and acting as an influential pressure group, or whether it should become more like an executive arm of the Administration, with specific and continuing responsibilities.

It is also important that an attempt should now be made to decide what functions are and should be carried out by the distinguished but part-time advisory committees which now abound in Washington. The President's Science Advisory Council, consisting of 18 distinguished scientists with the director of the Office of Science and Technology as chairman, is the most cherished among these in the scientific community. The Federal Council on Science and Technology, again with the director of the OST as chairman, has formal responsibilities for coordinating the scientific policies of the central agencies of government and obviously has an important influence on the development of a strategy for science and technology within the Administration as a whole. But in many ways the National Science Foundation and now, increasingly, the Office of Education as well have important tasks to carry out in the formulation of science policy, while the National Science Board has yet another opportunity for putting its case directly to the Administration, again through the director of the OST. But even this is not the end of the list of officially connected bodies with a voice in science policy—the National Academy of Sciences–National Research Council is not merely a learned society but also a body with statutory responsibilities for giving advice when asked. The fact that these committees frequently echo each other—as on oceanography, for example—does not constitute a proof that their proliferation is innocuous. The fact that most of them are somehow linked with the OST is likely to be a continuing assurance of that. But in the next few years, there is a case for thinking that the committees which should remain directly linked with the White House are the Science Advisory Committee and the Federal Council. It is in everybody's interests that the National Academy should be encouraged to be a more public means of expressing the views of the scientific community than has been its habit in the past, while the National Science Board and the National Science Foundation should both of them become concentrated on the development of policies for university research and development. The relationship of all these bodies to the President's Science Advisory Committee needs careful examination. There is a case for thinking that the President's Science Advisory Committee could do with an independent chairman even if this should create the risk of occasional disputes.

The overriding need, however, is that the OST should be given the power to do the jobs which are asked of it, whatever these may be. In the past few

years, it has become apparent that the OST has not been carrying out the long-term planning—particularly in manpower—for which it was given responsibility six years ago. A part of the trouble is that it lacks the staff to do the work, but it is also difficult for an office caught up in the day to day running of the presidency to set aside the time and energy to deal with long-term problems. It has also been a sad failing in the past few years that the OST has been less able to knock together the heads of those responsible for scientific research in the several agencies of the Government than its wellwishers must have hoped. Thus the Department of Defense some years ago was able to embark on a project for sponsoring academic research at universities without the approval of or even a detailed consultation with the National Science Foundation. And for all the misgivings of at least one director at the OST, the Federal Government was able in 1961 to embark on the programme to send a man to the Moon without even consulting the President's Science Advisory Committee. In this and several other ways, the position of the OST within the Administration but without power to do everything expected of it is a continuing source of trouble and discontent. There is every reason, in the interests of good government, why the power of the OST should now be more accurately mated to its responsibilities. If the new President does not do this more decisively than his predecessors, he may be hard pressed to fill the job.

FEDERAL LABORATORIES

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THE Daddario Sub-Committee of the United States House of Representatives Science and Astronautics Committee has come out for a much more thorough use of Federal laboratories. In a report based on hearings held in March and April this year, the committee says that the Administration has only a "passive" policy towards the use by one agency of laboratories belonging to another, and that there are no strong incentives to persuade the heads of government departments that they should use the facilities of other agencies instead of opening laboratories on their own account. Among several recommendations, the sub-committee suggests that the Office of Science and Technology (together with the Bureau of the Budget) should play a fuller part in the sharing out of work among laboratories, that laboratory personnel engaged on work for other agencies should be exempt from manpower ceilings (which will provide something of a carrot for the heads of agencies) and that techniques should be worked out for appraising the value of work done by laboratories (which will be something of a stick).

Although the sub-committee quotes the scale of expenditure on Federal laboratories, now running at something like $3,500 million in the current fiscal year, as evidence of the scale of the problem with which it is concerned, the possibility of deciding how much is lost because the Federal laboratories are not as fully used as they might be is as remote as that of deciding how many murders go undetected each year in the large cities. Mr Daddario has, however, been able to collect some powerfully suggestive qualitative evidence that there are economies to be made. He has, for example, discovered that even though the Economy Act of 1932 asks Federal agencies to see what they can do to help each other out before building new facilities or going outside the government service for laboratory services, the Comptroller General has been interpreting this regulation too literally. Government laboratories have sometimes been prevented from buying extra equipment to carry out particular tasks for other agencies even when they are best suited to do the jobs—in this spirit, the National Bureau of Standards seems to have been prevented from spending $150,000 on equipment to test tyres for the US Army, with the result that the work had to be carried out more expensively elsewhere.

Even though some witnesses seem to have told the sub-committee that they were accustomed to "walk around these obstacles", the report asks that they should be done away with altogether. It also complains that the Office of Science and Technology has not shouldered what would seem to be its natural responsibility for coordinating the taking in of each other's washing among government laboratories, and asks that it should atone for this by working out a clear statement of policy (in collaboration with the Bureau of the Budget) and bringing this to everybody's attention. The sub-committee is also anxious that some branch of the Federal Government should do what the National Science Foundation has been trying to do for several years—to compile a catalogue of public research laboratories and other facilities.

The sub-committee's argument on the provision of discretionary funds for laboratory directors will make many heads of laboratories feel wanted even though it may not quickly change the attitudes of people in the Bureau of the Budget. Some flexibility in the budgets of the laboratories is held to be a necessary "incentive and a reward for creative work". Enquiries seem, however, to have uncovered a diversity of practice in the different agencies. The luckier laboratory directors seem to enjoy anything between 3 and 15 per cent of discretionary authority within their annual budget, with 5 per cent as the average. In other agencies, however, laboratories are expected to be run on a tight budget—NASA, for example, usually leaves no leeway for its laboratory directors. The sub-committee urges that there should always be some flexibility in the annual budget of Federal laboratories so that laboratory directors can chase after interesting and potentially rewarding opportunities as these present themselves. It quotes, however, a warning by Dr Donald Hornig that discretionary authority should not be regarded as a licence "to go off on tangents".

The sub-committee's case that laboratories should be to some extent exempted from manpower ceilings, at least to the extent that they undertake work for other agencies, is somewhat undermined by the decision in July this year that all manpower ceilings in the Federal Government should be restored to those obtaining in 1966. Looking forward to happier times, however, the report urges that flexibility of manpower would at once encourage laboratories to extend their activities in directions helpful to other agencies and allow them to concentrate on the quality of their work rather than on the numbers of people engaged in it. Here, as with the case for discretionary authority in the budget, the assessments of the real needs vary quite consider-