

counteract the gradual decrease of federal support for basic research, which has declined by about 23% in terms of constant dollars since 1968". Although research budgets have been going up steadily since the early 1960s, inflation has been increasing even more sharply and the purchasing power of the research dollar has consequently been shrinking.

Those trends were documented earlier this year in a study prepared for the National Science Board, NSF's policymaking council. The study, *Science Indicators 1974*, was said to have been particularly influential in persuading the White House Office of Management and Budget (OMB) to back the proposal for a large expansion of federal support for basic research. It showed that total expenditure on basic research (both public and private) increased from \$1,200 million in 1960 to about \$4,000 million in 1974, but that with inflation factored in, research support peaked in 1968 and by 1974 had fallen to the 1965 level.

In its written report on the NSF appropriations bill, however, the House Appropriations Committee didn't agree that basic research is in financial trouble, suggesting instead that "there may be problems of interpretation of the data" in the *Science Indicators* study. In particular, the committee notes that during the early 1960s, federal agencies tended to maximise their reported support of basic research but more recently, when the watchword has been "relevance", they have tended to classify research as applied whenever possible. Those factors have tended to skew the trends. Equally important, the committee argues that research budgets rose very sharply in the early 1960s, to reach a high level

of federal support, and "this base has continued for the past decade". Moreover, the committee quotes Dr Stever as describing the United States' research and development effort as "still the strongest in the world".

In short, "after carefully considering all factors relating to NSF's research support programs, the Committee feels that the Foundation should be given the budgetary resources needed to continue its current level of research support". In addition, the committee notes that since the research budgets of a few other agencies, such as the Environmental Protection Agency and the Energy Research and Development Administration, have been increased, there seems to have been a marked shift in basic research priorities. The broad policy implications of that shift need to be studied by the new White House Office of Science and Technology policy and, perhaps, by the next Administration, the committee argues.

It should also be noted here, however, that for the past couple of years, NSF has been accorded considerable adverse publicity because of its support of supposedly trivial research projects. Several Senators and Congressmen have managed to get their names into the newspapers by taking cheap shots at research grants with funny-sounding titles and, consequently, there is a strong public perception that the foundation is wasting taxpayers' money. The committee notes in its report that there have been "major concerns in management and administration of NSF programmes", but it stops short of saying out loud that it isn't politically very easy to increase NSF's budget in an election year.

As for other parts of NSF's budget, the House Appropriations Committee

was more generous. It increased, by \$9 million, the Administration's budget request for science education activities, including a \$3 million addition for courses to acquaint teachers with new school science curricula and new teaching methods. The bulk of NSF's education funds are channelled into universities and colleges, and provide a jealously guarded form of support for higher education. They therefore have considerable popular appeal, which is one reason why the committee preserved them from the axe.

Meanwhile, on May 27, the Senate passed a bill which would broaden NSF's activities and change some of the foundation's management practices. Sponsored by Senator Edward Kennedy, the bill would, among other things, increase public participation in the formulation of NSF policies by increasing the numbers of lay members on NSF committees and advisory panels. It would establish programmes to improve opportunities for members of minority groups to study science and engineering, and it would also establish a new programme of grants to enable state governments to strengthen their science policy machinery. A House-passed version of the bill is, however, much less ambitious and it is likely that some of the provisions in the Senate version will be dropped before the measure is given final Congressional approval. Some NSF officials have also expressed reservations about Kennedy's bill, arguing that it would steer the Foundation further away from its central mission of supporting basic research.

The chief worry of NSF officials, and their clients in the universities and colleges, however, is that Congress now seems likely to prolong the 10-year erosion of support for basic research.

## AUSTRALIA

# Back to two o'clock

*Peter Pockley reports from Sydney on developments involving the institutions concerned with Australia's science policy*

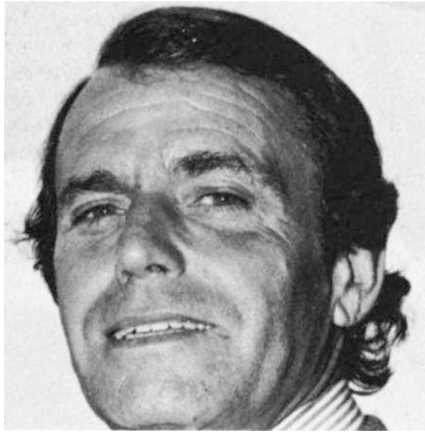
IN spite of strong pressures for its abolition, the Australian Science and Technology Council (ASTEC) has survived. The Prime Minister, Mr Malcolm Fraser, has announced that the council, established last year by the Whitlam Labor government, will be reconstituted and continue for a further 12 months in an interim capacity. ASTEC, then, becomes one of the few of Labor's initiatives to survive the Fraser razor, and the scientist-politicians involved in the fight for

ASTEC can be satisfied with their efforts. Survival was necessarily their prime goal, but it appears that this has been offset by the acceptance of uncertainties about the Council's functions and influence. The real bureaucratic battle has yet to be fought and it looks likely that ASTEC, in its reconstituted form, will have no influence over the 1976-77 Budget priorities.

The science policy clock started ticking in Canberra about four years ago when the Labor Party became the first political party in the country to enunciate a science policy. Before then, the Liberal and Country Parties, through successive Ministers for Education and Science including Mr Fraser, had repeatedly set their faces against defining, or even attempting to

define, a science policy. Spurred on by leading scientists to respond to the ALP initiative, the Liberal government of Mr William McMahon appointed an 11-man Advisory Council for Science and Technology (ACST) in the last months of the government's life. The clock advanced to one o'clock.

On Labor's accession to power in December 1972, the Department of Science was formed. The clock spurted ahead to four o'clock, but dropped back to three early in 1973 when the ACST was axed and no replacement body for advice was appointed. The clock stopped dead for a year while science policy, finance and administration marked time. The visit in 1974 by the Organisation for Economic Co-operation and Development (OECD) to study Australian science policy started the clock again, and by early 1975 it had reached six o'clock with the an-



*Fight on his hands: Senator James Webster, Minister for Science*

nouncement that ASTEC would be born. By the year's end the hour hand had started to climb up to base with ASTEC starting to sort out its priorities and gearing up to offer effective advice. Seven o'clock had been reached with the longest hours of labour ahead before a coherent set of principles and proposals could be formulated.

Then, in December, Labor fell; time went into reverse. Mr Fraser announced the retention of ASTEC before zero was reached; the time is now two o'clock, a small but definite advance on the Liberals' last position on the formulation of science policy. Here the temptation must be resisted in trying to stretch the analogy further, lest it turn into a clock paradox.

ASTEC's Secretariat has been transferred in body and soul from the Department of Science (where the mutual relations were markedly uneasy) to the Department of the Prime Minister and Cabinet; it has the status of a bureau and will report directly to the Prime Minister. The question of statutory independence has been postponed to the end of 1976, and although not generally favoured by the Liberal's approach to controlling advisory bodies, has not been ruled out. The Minister for Science, Senator James Webster, has publicly accepted the move although it has notably downgraded his role in Cabinet and his Department's chances of survival. For example, the Advisory Group of five men set up to examine ASTEC earlier this year accepted lock, stock and barrel the terms of reference spelled out by Mr Fraser himself during the December 1975 election campaign, viz:

The Council will be the major independent advisor to Government on such matters as:

1. The development and application of science and technology to national needs and objectives.
2. New areas of science and technology which are of importance to Australia, including fields of industrially and com-

mercially oriented research and development.

3. The balance, adequacy and effectiveness of national efforts in various fields of science and technology, including defence science, and means for improving efficiency in the use of resources.

4. The relative importance of efforts in those fields of science and technology which may contribute to national economic and social development and welfare and to the advancement of scientific knowledge.

5. The effective development and utilisation of scientific and technological manpower.

The first Interim ASTEC had established a number of Task Forces. These have been formally scrapped in name only, for "ad hoc committees and working parties will have to be used for specific tasks . . . Before establishing a committee or working party the Council should obtain Prime Ministerial approval". Maintaining a fine balancing act between independence and being firmly in Mr Fraser's pocket may be helped by a provision for "early publication of Council reports . . . for comments from the scientific and the industrial community before firm decisions on policy are taken by Government".

A further period of uncertainty and delay in bringing ASTEC to a full flowering has been ensured, though, by Mr Fraser's direction that "the first task of the Council will be the preparation, by the end of 1976, of a definitive report . . . on the long-term future of ASTEC." Self-examination, again.

Six of the original 12 members of ASTEC have already been put off, with an accompanying degree of public fuss. The remaining six include the original Chairman, Dr Lewis Matheson, who has been retained in a part-time capacity. The Advisory Group has ensured its own continuing influence by successfully recommending that they be appointed en bloc to the reconstituted Council. Two of the Advisory Group (Dr Matheson and Professor Robert Street, an increasingly influential figure in Australian science politics) were already on the previous Council; the other three included two from the Australian Academy of Science. With at least five members on the new Council, the Academy has the dominant scientific voice. Remaining places on the Council are certain to be filled by people from industry and commerce.

ASTEC's retention and transfer to the Prime Minister's direct responsibility is the clearest signal yet that the Department of Science and its Minister has a major fight on its hands for survival. ASTEC is now in a position to assess the Department of Science's own priorities. The Department is listed as but one of five Federal Departments plus one Agency (CSIRO) with signi-

ficant research and development budgets which will be "invited to attend all meetings of the Council but without voting rights and without any responsibility for the Council's decisions."

Further, the Minister for Science publicly acknowledged at the ANZAAS Congress in Hobart on May 10 that his Department is under real threat of abolition. He blamed the report of the Science Task Force of the Royal Commission on Australian Government Administration for "doing a disservice to the scientific community in advocating the abolition of the Department". Senator Webster was merely reflecting the understandably critical stance of his Department's Secretary, Sir Hugh Ennor, to the draft of the Task Force's report released in January. Unrepentant, the Task Force's final report to the Royal Commission has stuck to its original recommendations that the operational branches and sections of the Department be distributed around other departments with scientific components. The Royal Commissioner, Dr H. C. Coombs, is now considered likely to accept these recommendations in his report due before the end of June.

Running parallel to the Royal Commission, which had been set up by the Labor Government, is Mr Fraser's own closed inquiry into the structure of the Australian Public Service. Headed by a former public servant, Sir Henry Bland, this committee is sending tremors throughout Canberra. If it runs true to the spirit of its founding father, who likes to be seen as a man of steel, the Bland Committee will recommend (again shortly) that various departments and agencies be amalgamated or some of their functions transferred to the six States of Australia. The Department of Science is a prime target.

In all of these hassles, the Labor Party and its science spokesman, Mr Rex Connor, have maintained a level of public disinterest which has done nothing to enhance their reputation as anything more than the initiators of science policy discussions at a political level.

Among scientists, a sense of *déjà vu* has set in. A dreary and poorly attended symposium on science policy at the ANZAAS Congress was in sharp contrast to lively symposia on the subject at the previous two Congresses held during Labor's reign. The debate has given all the appearances of degeneration into internalised rows about administrative structure (for example, ASTEC versus the Department of Science). Questions of the content of research and development and national priorities for research funds seem, for the moment, to have been put into the "too hard" basket. □