engineering, where the British enjoyed a traditional eminence, the deep troubles of Clydeside shipyards have had a parallel effect.

Ironically, even where research or brillant strokes of invention seemed to give the British an early technological lead—as with the commercial jet and the vertical takeoff aircraft, the hovercraft, the linear induction motor, and carbon fiber—actual experience in the marketplace has somehow been disappointing. Most notably, the massive national investment in nuclear power technology has so far failed to pay off, a conclusion ruefully documented in a report from the comptroller of the Atomic Energy Authority (AEA) in an appendix to the recently published annual report that compares total development costs and returns.

Disillusionment with Science

Disillusionment with science among the young is reflected in their choices of university courses. The British university system is still a highly selective one and further from an open admissions policy than are universities in any other major European country. Into the British system has been built a bias in favor of science which extends to faculty, facilities, and places for students. As the new university year began, unofficial but apparently reliable figures showed that there were 3571 places in the sciences and only 2700 qualified candidates to fill them. In engineering there were 1240 candidates and 1968 places available. In the arts and social sciences, on the other hand, about 10,000 candidates were vying for 2200 places, with the heaviest crush occurring in the social science faculties.

Excess capacity in science and rising unemployment among science graduates is causing the same sort of examination of science manpower policy, past and present, that is going on in the United States.

The debate over science policy has not, in fact, suddenly blown up. In the mid-1960's, concern about costs and productivity in the relatively large government research establishments had, for example, propelled the AEA toward pushing a policy of diversification in research at its major civil research establishment at Harwell and encouraging AEA scientists to secure research support from industry or other ministries.

It is hardly a surprise, therefore, that the government is reexamining the assumptions on which science policy is based and looking hard at the options available. It is generally expected that, by and large, the Dainton report expresses the research council view of arrangements in science. In the SRC annual report, council chairman Sir Brian Flowers wrote, "It has always been the view of the SRC that an autonomous Research Council entrusted with real powers and responsibilities is well able to judge the intrinsic merit of educational and research proposals, and to relate these to work in other disciplines and the main needs of industry and Government. It is uniquely placed to attract to voluntary public service people with the experience and qualifications to advise how public funds can best be used." Flowers and his opposite number at the Natural Environment Research Council, V. C. Wynne-Edwards, who took a similar tack in his annual report, are obviously not prepared to preside over the liquidation of the system they help to operate.

Kennedy and McElroy Differ

Senator Edward M. Kennedy (D–Mass.) has encountered stolid resistance from the National Science Foundation to his efforts to cast NSF in the central role in the elaborate and expensive scientific conversion program he has designed. Kennedy not only wants NSF to administer the bulk of the program, which would involve an expenditure of $1.7 billion over 3 years; he also thinks the foundation should consider becoming the main focus within government of a strong, centralized civilian effort at redirecting science and technology to social problems. Director of the NSF William D. McElroy, at hearings last week on the Kennedy bills, made it clear that he regarded the program as marginally relevant, and that in any case NSF was not the man for the job.

Kennedy's plan comes in three parts: the first provides temporary relief for unemployed scientists and engineers through low-interest loans; the second authorizes $500 million over 3 years to supply technical, educational, and financial help to companies, communities, and individuals engaged in converting to civilian work. Crowning these is the $1 billion New Cities Research and Experimentation Act, referred to by some as Kennedy's "urban NASA," which would set up an administration (hopefully within NSF) to mobilize the nation's scientific resources for the design and development of livable urban environments.

McElroy, who pointed out that the Administration is already busy implementing schemes to tide over jobless professionals, insisted that NSF was already doing its social thing through its new RANN (Research Applied to National Needs) program. He held to the view that the way to help the unemployed in the long run was through the creation of jobs, not through retraining or loan programs. To improve the long-term situation, he said, what is needed is a bigger investment in basic research and development.

McElroy also explained that, in order to prevent a recurrence of the present situation, people and institutions must learn flexibility and adaptability so they can readily reorient their work as new technologies and national goals roll around. "We have no choice but to 'teach old dogs new tricks,' " he concluded. Suggested Kennedy: "Maybe we should see if we can get NSF to be an old dog that learns a new trick too." But McElroy seemed to think this was too indiscriminate an application of the metaphor. ". . . [T]he sheer magnitude of this total problem is such that . . . NSF's contribution would be limited by the modest resources available to NSF and the nature of our experience, which has been primarily with academic institutions," he testified. If Kennedy's mammoth project gets off the ground, it may well trigger a difficult reevaluation of the role of NSF. McElroy, at any rate, will not have to worry about it. He has announced plans to quit at the end of next January and become chancellor of the University of California at San Diego.

—CONSTANCE HOLDEN