

development and the cost of the finished product. Arguing that if it somehow failed to win the Lockheed business, Rolls-Royce might have to abandon the manufacture of aircraft engines, the company set out to win the only customer in sight and, in the end, jubilantly signed a contract that was a simple financial trap. As things have turned out, it would have been far better if Rolls-Royce had said, in 1968, that the prospects for continuing business in aircraft engine manufacture were so bleak that it had better concentrate some of its technical resources on other kinds of products. What, after all, is the point of being the best manufacturer of steam railway locomotives when diesels are all the rage?

In the long post mortem on the Rolls-Royce bankruptcy, it has been fashionable to say that the company's technical management was too sure of itself and arrogant as well, although it is hard to see how these people could have behaved otherwise when they were locked into a contract which implied that failure would be avoided only by the most daring feats of technological brilliance. The more serious complaint is that nobody seems to have given sufficient thought to the long-term future of the company. Was it really sensible to plan for continued growth in a market in which the demand had levelled off? The most serious error at Rolls-Royce, which other companies in advanced technology should take to heart, is that it must frequently be necessary to redeploy skills from one field to another.

Catastrophe or Change?

PREDICTABLY (see *Nature*, 235, 63; 1972), anxiety about environmental catastrophe has spread to Britain, and it is hard not to remember Professor D. J. Bogue's description of the same phenomenon in the United States as the "nonsense explosion". Many readers of *Nature* appear to have been surprised that a journal which counts Sir Julian Huxley's grandfather as one of its sponsors should have taken such a fierce line on the warnings of environmental catastrophe now commonly to be heard. The truth is that public confusion which has been created in the past few years by warnings of catastrophe is a serious impediment to the rational conduct of society. A part of the difficulty is technical, for whether the prophets are complaining of the hazards of DDT, carbon dioxide in the environment, the threatened exhaustion of natural resources or the growth of population, a proper understanding of what happens and is likely to happen is fraught with uncertainty, complexity and error. Understandably, people at large are puzzled to know what weight to give to warnings of catastrophe around the corner and to assurances that the problems are not nearly as alarming as they are said to be. In the hope of contributing to public enlightenment, *Nature* will in the next few months publish a series of special articles written so as to put some of the environmental questions now widely talked of in what may be thought to be a better perspec-

tive. *Nature* will also organize a scientific conference with the Royal Institution on April 28 to provide a platform for moderate views and a discussion of them.

The question whether the years immediately ahead will bring catastrophe is, however, not so much technical as philosophical. The document published two weeks ago by *The Ecologist* says that "the principal defect of the industrial way of life . . . is that it is not sustainable. Its termination within the lifetime of somebody born today is inevitable—unless it continues to be sustained for a while longer by an entrenched minority at the cost of imposing great suffering on the rest of mankind". The calculations supposedly implicit in statements like this are that particular resources, petroleum for example, may be seriously depleted on time scales of the order of a century, or that, after a century of unrestricted growth, the population of the world may have grown to such a point that life is intolerable or even insupportable. As yardsticks which show what kinds of problems may in future be important, pieces of arithmetic like this are no doubt of some value. The error in supposing that they constitute a proof of imminent calamity is the assumption that administrative and social mechanisms which exist already or which are in the course of being developed will do nothing to fend them off, but this is to ignore the beneficial tendencies already apparent—the rapid decline of fertility in the past decade in South-East Asia and the Caribbean and the working of the classical economic laws of scarcity, originally described by the great Victorians, to strike a balance between exploitation and conservation and the way in which governments in North America and Western Europe have succeeded in improving the quality of urban air and water by laying out money on pollution control. In short, those who prophesy disaster a century or more from now and ask for apocalyptic remedies overlook the way in which important social changes have historically been effected by the accumulation of more modest humane innovations.

In the circumstances, it is not surprising that the remedies suggested for the avoidance of catastrophe are often unpleasantly unrealistic. *The Ecologist's* manifesto may be controversial because of its over-sharp definition of the supposed threat, but it shares with other declarations of this kind the advocacy of thoroughly pernicious changes in the structure of society. It is tempting to ask how many of those who gave their names to the document solemnly consider that industrialized societies such as Britain will be better off if they are organized in small communities in which social mobility is deliberately restricted and in which agriculture is central to everybody's life. Are these not potentially illiberal arrangements? Is there not a serious danger that to strive for them will weaken the will of civilized communities, developed and developing, to work towards humane goals—the removal of poverty and the liberty of the subject?

Strengthening the Guild

LORD JAMES's committee on teacher training, which has reported this week (see page 186), appears to have been as conservative as its critics expected and as predictable as the flow of inspired leaks to the newspapers in the past year has suggested. The essence of the committee's recommendations is that the British government should make the fullest use of the institutions of higher educa-

Nature and the Environment

Nature and the Royal Institution will hold a scientific conference on environmental problems at the Royal Institution on the afternoon of Friday, April 28. Speakers and other details will be announced later.