

immediate result was an unprecedented public investment in the development of civil nuclear energy and there has been an awkward tendency for the promised commercial benefits to recede almost at the rate of one year per year. It would be wrong, of course, to underestimate the benefits that have come from this investment. There is now a viable and potentially valuable nuclear industry, while the incidental benefits of these developments are not unimportant. As with Concorde, however, there is a serious likelihood that the full costs of development will not be recovered until several decades have passed.

Mr Benn often claims that his is a "ministry for industry". In fact, of course, it remains a ministry for the aviation and electronics industries, and its sorties into the more basic—and less attractive—industries are still a small part of its whole activity. The budget of the ministry for activities outside aerospace and electronics amounts to less than £10 million, although it spends another £10 million in its civil research establishments. What this means in practice is that the aviation industry, which last year spent £28 million of its own money on research and development, got another £136 million from the Government, while the motor industry, which spent £44.5 million of its own, got only £1 million. The textile and man-made fibre industry received exactly £1,000 from the Government, while the electrical machinery and generation industry spent £15 million of its own and got only £400,000 in aid. (To this must, of course, be added the value of work carried out by the civil research establishments, on which it is hard to place an exact industrial value.)

Not all of this is the ministry's fault. For one thing, it inherited substantial responsibilities in the aviation and electronics industries, and could hardly cut them off without a penny. (Without Concorde, there would

have been much more room for manoeuvre.) Equally, it inherited a number of research establishments working on problems more or less relevant to industry. To the extent that it has forced the work of these establishments into an industrial mould, it deserves congratulation, and changes Mr Benn announced last week will do something to hasten the same process. He has created a number of new committees with an industrial membership to give advice on the programmes of the establishments. The new committees will advise on the research programmes in chemicals and process engineering, hovercraft, machine tools and numerical control, measurement and standards, mechanical engineering, mineral processing and metal extraction, and shipbuilding and shipping. At the same time, Mr Benn abolished the steering committees and visiting boards at the National Physical Laboratory, the Warren Spring Laboratory and the National Engineering Laboratory.

But if the industrial programmes of the ministry have not expanded as fast as they might have done, industry itself must bear a good part of the blame. There is little doubt that the expansion of the industrial programmes depends not on the availability of finance but on ideas from industry. The announcement that Harwell was ready to undertake industrial work, two years or so ago, is said to have produced only two replies from industry. Some means of breaking down industrial suspicion must be devised, and the ministry industrial liaison officers have an important part to play here. As far as the civil establishments are concerned, the ministry's policies would be more convincing if there were evidence that the sponsoring of work in government establishments is an effective way of making money. So far, the surveys which have been done are encouraging but not exactly overwhelming.

Mr Short's Shibboleth

If the works of Aristotle were the standard science textbooks in British schools and if the Archbishop of Canterbury were to declare not only that this was the proper way for science to be taught but also that 90 per cent of parents agreed with him, there would be grounds for supposing that a certain measure of insanity had crept into the situation. All too similar grounds have recently been supplied not by a minister of religion but by a Minister of Education and Science posing as one. Thumping a tub made from the shipwreck of Noah's ark, Mr Edward Short has declared that religious instruction and daily worship will continue to be compulsory in the new Education Act. Startled burghers and parents at Howling Lane, Alnwick, heard a new Savonarola proclaim that the "Christian character of the community" is in danger. "It is at this point", the minister exhorted, "that we must man the barricades. If we do not do so, in my view, Britain will cease to be a Christian country within two generations."

It is important to understand just why the minister's sentiments should occasion profound despair. It is no disrespect to the revealed religions to say that their revelation occurred at a point in time and that the truths they inculcate are not necessarily eternal but were designed in the first instance to suit the needs of a particular community. As an agrarian society becomes industrial, its religious and ethical needs change, and in a more radical way than can be contained by the traditional reinterpretation and attrition of Church dogma. This is one of the reasons why Britain is no longer a Christian country. Only 20 per cent of the population is confirmed in the Church of England and less than 6 per cent attends communion at Easter.

Wrestling with truth like Jacob with the angel at Pelial, Mr Short commits what may be politely called a foul. "In a national survey of parents conducted in 1965, it was found that 90 per cent of those interviewed thought that the present arrangements for religious

education and daily worship should continue. With this wide support for continuing religious education in schools, there is no justification for altering the existing statutory requirements." Elections in totalitarian countries sometimes produce as much as 90 per cent in favour, but can the minister seriously believe that when 6 per cent of the population are practising Christians, 90 per cent of them should wish their hypocrisy to be institutionalized in the curriculum, or does the minister merely believe it, like Tertullian, because it is absurd?

There are three broad grounds on which religious instruction could be justified. First, the lore and language of the Bible are part of the cultural heritage, but on this point its claims for attention are no greater than those of Latin and Greek. Second, religious instruction may be justified on the view that the Christian religion is in some sense true, and that children should be indoctrinated with religious truths as an equipment for life beyond the grave. Third, it may be argued that the ethical behaviour required by society can best be put across with the support of a religious framework.

Whether or not any particular religion is true is so obviously a matter for dispute that it should be clearly recognized as such. Daily school services, which are hard in practice if not in theory to opt out of, may be all right for consenting adults but are an offence against the dignity of children. Nor can compulsory religious instruction be justified except in the crudest terms; those who believe it necessary cannot have much faith in the persuasiveness of the creed they wish to inculcate. Religion, in any case, is in the first instance a private matter that to begin with should be taught in the home if anywhere. The state has fully exercised its duty if it provides religious instruction only for those children past some discretionary age who have decided they wish to pursue such matters further.

There are those who believe that, religious content apart, divinity classes are an effective method of moral suasion. But Bible stories, whatever their literary or mythological value, are a confusing and inefficient way of exemplifying moral problems. And it is on the ethical issue that Mr Short's speech sounds most antique. Children today have many problems to solve. There is the question of sexual behaviour, and whether, for example, they should take "pot". New ethical problems will arise, of which organ transplants are probably only the harbingers, and which as adults the present generation will have to solve. There is a great deal of instruction to be given on factual, ethical and philosophical matters if schoolchildren are to be properly equipped for decisions affecting both their own lives and the nature of their society. But what does the Minister of Education and Science have to offer? Must the example of Onan help to implement the Family Planning Act? Will the fate of Abimelech keep the family escutcheon bright? Has the sacrifice of Jephthah's daughter any pertinent message for the 20th century? Can the minister really believe that schoolchildren will grow up to face the same ethical

problems as confronted pastoral Hebrew tribes of the second millennium B.C. and, if so, that they should be taught, even in a diluted form, the same rules for dealing with them?

The truth is, of course, that there is a case for asking that schools should teach material directly relevant to the ethical issues which children will have to face when they grow up, but no means of knowing just what that should be. To be sure, there are some good models from which an acceptable curriculum might be fashioned. Several independent schools systems in Britain and elsewhere have done noble pioneer work, while people like Dr F. H. C. Crick have made valuable suggestions from outside the classroom. Mr Short would do the educational system of which he is apparently so defensive a greater service if he were to initiate some sensible curriculum development in this area—that is a practical task to which his present office could lend valuable support. Whether religion as such has any place in publicly operated schools is another question, but it must surely by now have seemed to Mr Short a little odd, to say the least of it, that he should have to huff and puff as vigorously as he has done in favour of religion in British schools when other countries, at least as devout, consider that religion has no place in schools.

NUCLEAR POWER

European Collaboration

THE European Nuclear Energy Agency still hopes to devise a way of producing a collaborative fast reactor programme for Europe. It is clear, however, that the final decision about the viability of the project will not be taken until the end of March, when both the technical groups have reported their findings to the top level committee. The two teams have been studying two different approaches to the cooling of the reactor. One, at the Karlsruhe nuclear research centre in West Germany, has been thinking about the possibility of a steam cooled fast reactor, while another technical group at Winfrith in the United Kingdom has concentrated on gas cooling. So far, neither group has published its findings, though both reports are believed to be complete. In order to justify taking the project any further, the technical groups would have to show substantial advantages over the molten sodium cooling which has already been adopted for the British fast reactor, among others.

According to the annual report of ENEA, just published, the Winfrith technical group has concluded that gas cooling would be a promising alternative, but that it raises important problems of fuel element development. The report suggests that the development could be carried out in the first place in existing irradiation facilities, but that special facilities would be needed later. Once the fuel element development work had been done, however, it ought to be possible to move straight to a commercial fast reactor, omitting completely the prototype or demonstration stage.

The rest of the ENEA annual report strikes an optimistic note. There has, it says, been a renewal of interest in joint undertakings, particularly those in which industry has a part to play. The organization's