

condition. But in Saudi Arabia it is quite common and it is likely to emerge as a major medical burden now that adequate pre-natal and post-natal care is allowing thalassaemic babies to survive.

The Ambassador discussed the problem with Prince Sultan — Minister of Defence in Saudi Arabia — who immediately offered \$100,000. He sent it to Khaled's mother in England, with the request "to build on this". He would back similar research in Saudi Arabia, he said.

Prince Sultan asked for the fund to be named after his father, King Abdul Aziz, and this may have encouraged other princes to contribute. Prince Nawaf offered \$30,000; and Prince Salman bin Abdul Aziz gave £10,000 to the Thalassaemia Society, a group of parents and sufferers. The boy Khaled (who is now 18 and has a good prognosis) himself approached Sheikh Yamani, the Saudi oil minister, who chipped in £15,000 for UCH through Aramco. Dr Modell suddenly found her research — which had rubbed along on £800 a month from private patients and one Medical Research Council technician — could develop.

Meanwhile the wife of Sheikh Faisal — the Ambassador — had asked Dr Modell and her collaborators, Professor Denys Fairweather (professor of obstetrics and Gynaecology at UCH) and Professor Bob Williamson (professor of biochemistry at St Mary's preclinical school), to provide a letter explaining their research and its needs. The result was that Crown Prince Fahd encouraged a link between King Abdul Aziz University and the London schools. Saud Sejeny — the Vice Dean of the medical school — thought that research should be a major element in the contract, and so it has proved.

The £1 million will be divided roughly 50:50 between the UK and Jeddah. The British scientists and doctors will go for short visits to Jeddah, and members of the Jeddah team will travel to Britain for training.

At Jeddah departments of haematology, obstetrics, paediatrics and community medicine will be involved. "We have as much to learn from them as they from us" said Dr Modell. Saudi Arabia is determined to adapt Western medicine to a form appropriate to its own culture and community needs. For example, the system of prenatal diagnosis which has been very effective in combatting thalassaemia in the London Cypriot community may not be acceptable for Saudis, as it involves sampling fetal blood at 18 weeks of pregnancy (before that the fetus is too delicate) and abortion at 20 weeks if there is a positive indication. Also there is a high rate of cousin marriage in the country, so that the question of genetic counselling would be complex.

The first step of the contract will be to export methods of clinical treatment, and help standardise techniques for diagnosing haemoglobinopathies. Jeddah already

works in this area but London will provide "that extra tier of research thinking". The second step will be to extend research, and at Jeddah particularly to mount several surveys to help determine the genetics of thalassaemia syndromes — of which there are more than one.

Future hopes lie with developing new methods of treatment, and with earlier prenatal diagnosis (towards which Professor Williamson has had recent success — see *Nature* 285, p144; 1980). All avenues are open in the contract and, says Modell "the Saudis will wait to see how this goes. If it goes well, they may design some other projects".

Robert Walgate

Defence research

New customers

The British Ministry of Defence is on the way to being a substantial backer of university research. The ministry's spending on university research, amounting to £2.75 million in the financial year 1978-79, had increased to £4.2 million in 1979-80 (both figures in 1978 prices). And there is at least some hope of further growth to come.

Much of the credit goes to Professor Ron Mason, Chief Scientist at the ministry for the past two and a half years, but previously a chemist at the University of Sussex. Although his predecessors in the post have usually come from universities, he seems to have been especially keen that more defence research should be done there. Some of the topics the ministry is just now keen to foster through defence seminars for university staff and industry are operational analysis, surveillance techniques, new techniques arising from space research, applied psychology in man, machine intelligence and signal and image processing.

The stagnation of research council budgets has helped the MOD to open university doors. Mason says that researchers have begun to put aside their scruples about accepting defence money now that funds from conventional sources are scarce. But there is a snag — the general demise of the dual-support system has meant that many universities lack the basic facilities which universities used to offer. The universities have also become less attractive to external bodies seeking to place research contracts as they have become less able to offer jobs to bright young people.

Professor Mason says that the universities are now more sluggish in their response to urgent research needs than even two or three years ago. His problem is that the ministry's own research establishments (34 of them) are no better. There, too, most vacant posts go unfilled.

The universities, therefore, have not lost all their appeal. There are two ways in which Professor Mason has tried to tap their resources for defence research. He is

most proud of his defence seminars intended to tell academics what the MOD is looking for and to let Mason and his colleagues know what universities have to offer. So far, there have been five seminars, most of which have led to firm research contracts. Several more are planned.

Mason also hopes for benefits from closer cooperation with the Science Research Council. Both organizations have to tread warily however because of possible conflicting interests. The MOD is oriented towards problem-solving for its own ends whereas the SRC's aim is to support research of 'timeliness and promise'. Nevertheless, says Mason, the SRC has recently become more willing to pick out topics such as polymer science and marine engineering for special attention. He sees no obstacle to future cooperation on promoting areas of mutual concern, systems analysis and space systems for example.

Talks with the SRC chairman on the former and a multi-lateral debate on the latter are already under way. Britain has wound down its national civil space programme to the extent that British scientists now have to rely on the European Space Agency for facilities. Mason, however, reckons that there is a growing interest in space among British industry which could be used to benefit both civilian and military users.

Mason's clout may be enhanced because the defence research budget does not appear to be as much under pressure as the civil research funds. The government recently announced its intention of sustaining a 3 per cent annual growth in real terms in defence until 1986. But there are problems, for defence research, involved as it is with high technology, tends to increase in cost more rapidly than inflation. Next year, Britain will spend 13 per cent of its defence budget on research and development, £1,600 million out of £10,800 million. But is the balance right, and how much should be spent on long-term as opposed to short and medium-term research? Unfortunately, says Mason, there is no way of estimating a correct balance.

The MOD research establishments have been mainly concerned with short and medium-term research, and Professor Mason believes there is a need to increase their innovative function. The MOD has recently reviewed the role of the defence research establishments so as to assess how much of their responsibility could be transferred to industry and the universities. That review is due to be brought up in Parliament before the summer recess.

In the meantime, Professor Mason says there is a need for more collaboration on research between government agencies. "The government enforces a policy of water-tight compartments. But we can't afford, given the resources, an isolated policy", he says.

Judy Redfearn