

Argentine science

Slow return to openness

Buenos Aires

ARGENTINE science is recovering slowly from the traumas of the past decade. In contrast with 1973, on the eve of the return of Peron, and 1979, after the military had finally repressed the opposition, it is evident that the morale of the people has been uplifted and that there is a strong desire for political stability under democratic rule.

The severe repression by the military dictatorship afflicted all scientists, depriving many of their jobs and some of their lives. One biochemist, apparently considered too outspoken, had a bomb planted in his house and telephone threats which compelled him to leave his university and to move with his family to a remote part of Argentina.

Another outspoken biochemist became a victim of the mindless repression apparently only because he was Jewish. His home was visited one day at five in the morning by men in plain clothes, who had come to arrest him. Fortunately, his wife's mother answered the door and screamed out that the men were thieves. So he escaped with his pregnant wife and young children over the roof tops.

The Israeli government, to its honour, acted as a Scarlet Pimpernel by providing passports for such refugees, irrespective of their religion; a general escape route was organized with the cooperation of the Belgian airline Sabena.

The exodus of Argentine scientists during the repression and their enrichment of the culture of other countries has been documented by Budiansky (*Nature* 311, 201; 1984). Few of those expatriates have yet returned, probably because they cannot afford to; salaries in the universities and government institutes remain depressed. Industrial salaries are relatively remunerative, three or four times those of academics. The low salaries in the state sector (see Budiansky's article) and the general economic malaise are professional people's chief preoccupation.

In the aftermath of the repressions, demands for retribution continue, but scientists are divided. Some, partly out of self-interest or envy, are accusing those who prospered under the military of criminality; others, including many who suffered under the despotism, support the call for a "full stop" to recrimination.

In the universities, a commission is examining the credentials of all professors appointed during the past 20 years, when the normal procedures for appointment were suspended. This is time-consuming for university staff and probably diverts attention from the need to renew the resources of the universities so as to meet the challenges of the future.

Argentina, in common with the developed countries, has greatly expanded its university system in the past two decades. (Cordoba, founded about 1650, is probably the oldest university in the Western Hemisphere.) Although the old universities are still dominant, such extra resources as there have been seem to have been concentrated on the new universities, so that there has been little renovation of the older universities, which are now dilapidated and inadequately equipped to strengthen or maintain their position as centres of science.

Nevertheless, scientists are pressing on in reasonably good spirits, although they see no way out of the impasse caused by Argentina's economic problems. Subscriptions to journals have been cancelled wholesale; support for assistants has to come from professors' personal salaries. Buildings are in an appalling state, but all new building schemes have been frozen by the government.

There is a lack of campuses in the older universities, so that departments are widely scattered, and thus isolated from interaction with others and prevented from sharing equipment, libraries and overheads generally. Apparently, the authorities in the past have been suspicious of campuses as foci of political action by students. Surely such fears of criticism could be abandoned by the democratic government, even if the concentration of resources in campuses will have to be a long-term aim.

One move towards the concentration of resources was the inauguration of research centres by the national research council, CONICET. Buildings, staff and equipment were funded on a modest scale, but again these are dispersed and isolated. They have successfully encouraged good basic science, but now the government intends to transfer them from CONICET to the universities, which leaves researchers fearing that their centres will be reduced to a state of academic deprivation. Integration of the centres, with protection of their resources, is essential if their work is to expand.

In the biosciences, it is striking that, as elsewhere, the emphasis is now heavily on technology. The size of the Argentinian agricultural industry offers much scope for biotechnology to improve plant and animal crops, and eventually to exploit the arid regions and their solar energy. As in Brazil, 10–15 per cent of ethanol must be added to motor fuel to promote the exploitation of sugar by fermentation. Health care products are being developed through innovation in biotechnology. For instance, the Polichaco pharmaceutical company has announced a contract worth

US\$3 million to supply to Brazil diagnostic reagents for pregnancy testing. Excellent molecular biology towards characterizing the virus of Argentinian haemorrhagic fever is being done at the University of La Plata, in laboratories which in Britain would be condemned as unsuitable. With resignation, the researcher says, "This shows that expensive facilities are not essential for success in molecular biology".

The government has set up a committee to develop a policy for biotechnology, and many groups seem to be competing for access to any funds that may be made available. But the government is still searching for a formula to define biotechnology. Yet a policy is needed urgently because of the momentum of research in this field elsewhere in the world and to offer the Argentinian scientists the opportunities they deserve.

Academic scientists have even begun to entertain the idea of obtaining support from industry and other entrepreneurs, but this approach may need legislation; the universities have traditionally prevented academics from having links with industry.

The transfer of technology from university to industry is beset with difficulty. In the fermentation field, despite its rapid expansion to produce ethanol, there is a marked reluctance by industry to take advantage of scientific innovation which Argentine scientists are developing, even in ethanol fermentation.

Remedies may yet emerge from the changing political climate. Both the radical party government under Alfonsín and the recent Austral currency reform seem to be winning confidence. It is a pity that the Falklands (Malvinas) problem remains unsolved. The slogan "The Malvinas islands belong to Argentina" remains conspicuous in public places, even though serious comment recognizes the historical realities and the need for flexibility in Argentinian policy.

There is also a new spirit of cooperation in South America. Chile and Argentina have settled their territorial disagreement and, in the past weeks, there have been agreements between Argentina and Brazil and between Chile and Peru on friendship and cooperation.

The lack of normal relations between Britain and Argentina continues to affect trade. For instance, the supply of radioactive chemicals from Britain has been made difficult. One molecular biologist has resorted to making his own labelled nucleotides, with a cost saving of over 80 per cent on his reckoning if technician's time is discounted. There is an historical affinity between Britain and Argentina that surely requires Britain to settle its differences with Argentina with chivalry and thus to help ensure that despotism never returns there again.

S.J. Pirt