

# Antarctic research hit by crisis

## BAS counts the cost of island invasion

The present dispute between the United Kingdom and Argentina over the Falkland Islands has raised fears about the future of the British Antarctic Survey. But according to the survey's director, Dr Dick Laws, the invasion of the islands by Argentina came too late to have much effect on this season's work, with bases on the Antarctic continent already preparing for the long isolation imposed by the austral winter.

The British Antarctic Survey depends on the Falkland Islands to maintain contact with its research stations. The US National Science Foundation has agreed to provide a temporary commercial relay service via its base on the Antarctic peninsula, Palmer, stressing that it would only pass on messages of a scientific nature and would not handle those dealing with "political matters". In the long term, though, the communications problem could be resolved by setting up a new relay station, probably at the existing British base on Signy Island, in the South Orkneys. The Falklands are also used by the survey as a supply base, and although not indispensable, loss of those facilities would undoubtedly add to the difficulty and cost of operations. Alternative refuelling facilities within easy reach of the British bases are in the Magellan Straits, but so far Chile has not offered use of these.

Direct confrontation between the survey and the Argentinians has so far only occurred on South Georgia, where the commander of Grytviken base is also the senior representative of the Falkland Islands government. Grytviken, base for 26 of the survey's scientists at the time, had earlier been the scene of fighting between Royal Marines and Argentinian forces, although it is not yet known whether the base suffered any damage. Operations at Grytviken were in any case due to be reduced as from this month following budget cuts, despite pressure to maintain a British presence there. South Georgia has recently become a centre for work on krill, whose study as the dominant planktonic organism in the Southern Ocean is important for the exploitation of the Antarctic seas.

These problems come at the end of a troubled season for the British Antarctic Survey. In November the survey lost its two aircraft in hurricane-force winds at Rothera Station, resulting in the cancellation of virtually all Earth science projects, which rely heavily on air support of field parties. Damage to a De Havilland Twin Otter aircraft and the research vessel



South Georgia, showing the British Antarctic Survey's base at Grytviken (left) and the former whaling station (foreground).

*John Biscoe* the previous year had already meant abandoning that season's marine biological work, and cutting short other research programmes.

However, the future for what is widely acknowledged to be one of the most cost-effective research organizations operating in the Antarctic, is not entirely bleak. The Natural Environment Research Council, who provide the survey's annual funds of £5.6 million, have provided an additional £1.8 million for the purchase of two new aircraft, and £1.3 million for the rebuilding of an important station at Halley Bay, now nearly ten years old. Collaborative research with West Germany is another route that the survey has been exploring to keep within its budget.

The Argentinian action will probably not immediately affect the activities of

other nations in the area, which include the United States, the Soviet Union, Poland, Chile and Argentina itself, as none of these rely upon the Falklands for their communications or supplies. Although Argentina's own research efforts have been extremely limited, it is at present collaborating with the French in glaciological work, and plans exist to site a ground station for the first European Space Agency remote sensing satellite to be put into polar orbit, at the Argentinian base of Marambio.

Clearly the Falklands invasion is going to affect Argentina's standing amongst the Antarctic Treaty nations, due to meet in Hobart in two months' time to discuss the future exploitation of a region with a hitherto exemplary history of peace and international cooperation. **David Millar**

## Graduate students on shorter lease

British postgraduates take too long to complete their PhD theses, according to the report of a working party on postgraduate education published last week. Blame is laid primarily on the universities, although the research councils are also criticized for not taking matters more firmly in hand.

The working party, set up in 1979 by the Advisory Board for the Research Councils, found wide discrepancies in PhD submission rates between universities and between the natural and social sciences. Its recommendation that the research councils award postgraduate quotas on the basis of a department's past completion record is being taken up by the Science and Engin-

earing Research Council (SERC) in deciding quotas for 1982-83. SERC has also published a pecking order of universities based on PhD completion success which is intended to shame universities into remedial action.

The working party was set up two years ago under the chairmanship of Sir Peter Swinnerton-Dyer, then vice-chancellor of the University of Cambridge, to advise on postgraduate education policy. It has managed to comply with its remit to assess the ways in which research councils make awards to universities and particular disciplines and whether sufficient postgraduates of the right quality are produced. But the task of determining

whether postgraduate education is meeting manpower needs proved too complicated, chiefly because postgraduates often find employment in areas outside their disciplines of study and employers are usually unable to indicate precisely their future needs at postgraduate level.

The working party report concludes that postgraduate education should continue much at the present level, but suggests that the Natural Environment and Social Science Research Councils should take a leaf out of SERC's book by encouraging specific postgraduate advanced courses in subjects for which there is a growing need.

#### PhD success rates of SERC-supported students by subject

Subject	Success rate (%)
Biology	68
Chemistry	75
Physics	61
Maths	56
Astronomy	58
Engineering	52
Social science	39
Average	58.4

The data are for 1974 and 1975 starts, and were collected in July 1980–February 1981.

Strangely enough, however, unemployment rates are greater for those who have followed advanced courses than for those who have completed research studentships and, in the same breath, the working party also recommends that SERC should move towards research rather than advanced course studentships. It points to the reluctance to wind down courses once a specific manpower need has been met and SERC's difficulty in finding students of sufficiently high calibre to fill the places reserved for advanced engineering courses.

The universities come in for the worst drubbing. Poor PhD completion rates are attributed mainly to the morale of particular departments and the lack of adequate supervision. Poor supervision, the report says, can lead students to an unwise choice of research topics and can result in inadequate training in the techniques of research.

On the substantial differences in PhD completion rate between the natural and social sciences, the report says that there are inherent differences between the subjects. Thus social science students concerned that their first work should be a *magnum opus*, have a greater tendency to take on research topics which are far too ambitious to be completed within the normal three years. Perhaps, therefore, it is no surprise that 54 per cent of those embarking on PhDs in the natural sciences in 1975 had completed within five years compared with only 31 per cent in the social sciences.

Nevertheless, the working party finds the PhD completion rates in both disciplines "wholly unsatisfactory". The criteria for a PhD may have become more stringent in recent years, says the report, leading some students to take up topics unsuitable for a three-year study. Another

#### Average salary of graduates by occupation and highest postgraduate qualification achieved (1979–80)

<i>Engineering and technology</i>	
None	£5,520
MA	£5,700
PhD	£5,085
<i>Science</i>	
None	£5,350
MA	£5,970
PhD	£4,855
<i>Social studies</i>	
None	£5,810
MA	£5,970
PhD	£5,000

problem is that students from small departments can lose motivation, especially if inadequately supervised. It therefore recommends that the research councils concentrate their postgraduate awards in larger departments where students may be attached to groups of experienced researchers working on a particular problem, and that supervisors should take more care to fulfil their responsibilities. The aim should be to complete research work within three years and to submit a final thesis before the end of the fourth.

The working party's report recommends several remedial actions. Universities should monitor research students at the end of their first year of postgraduate study and relegate those unsuited for research to MSc courses. Both outside academic institutions and industry should have a greater role in the choice of an individual's research topic. Finally, the research councils should review their postgraduate policies every four years, taking into account representations from potential postgraduate employers. **Judy Redfearn**

#### University research staff

## Postdocs' plight

More than a quarter of the academic staff at the University of Bristol are contract researchers — postdoctoral students who in years gone by would now be on the academic staff. This is one of the more startling conclusions of a detailed survey of Bristol academics just completed by the lecturers' trade union the Association of University Teachers (AUT).

AUT claims that this is the most comprehensive study of university employment yet undertaken in Britain, and it reveals the frightening extent to which universities appear to be relying on labour which, if the research councils firmly apply their rules of cutting off postdoctoral support after, say, six years, could rapidly be lost. Nearly two-thirds of the contract researchers have less than a year of their present contract to run, the survey showed. Thus the university system could shrink without the government lifting a finger.

Naturally, AUT is most concerned about the individuals who may lose their jobs. A third are over 30 years old, one in five has dependent children, and nearly 40 per cent of researchers who have either masters or PhD degrees have no "academic status" (granting them voting and library rights, for example) in the university.

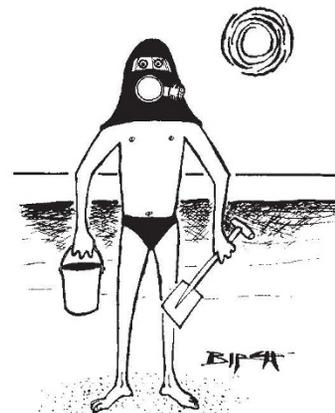
The survey, says AUT, "shatters the myth" that contract research can be regarded as a brief step on the way to an academic post. Nine per cent of the researchers surveyed had had four or more contracts, and 34 per cent, two or three. Twenty-eight per cent of the contract researchers had already been in research

## Med comes clean

Political bickering between the 18 countries surrounding the Mediterranean has not stopped the initialling of the fourth protocol and arm of the United Nations Environment Programme's (UNEP) plan to save the Mediterranean from further environmental damage. The Mediterranean action plan was launched at the Barcelona convention in 1976, and the latest agreement obliges the signatory countries to set up coastal protected zones. The aim is not just to preserve a representative cross-section of Mediterranean ecosystems but also to foster commercially viable farms for oysters, lobsters and other shell fish.

The 1982–84 budget of \$7 million will mostly be shouldered by Italy, France and Spain, with \$400,000 from the EEC itself. A major spur for this spending is the concern that environmental dangers will affect the tourist trade. From a scientific point of view the protected areas will be useful for baseline studies of ecosystems to see whether coastal waters are getting worse or better.

Among the Mediterranean species in danger of extinction are the monk seal, marine turtle, European otter, Dalmatian pelican, peregrine falcon, oysters, mussels, the Iberian midwife



toad, the pied kingfisher and the spectacled salamander. UNEP hopes that the present number of 15 marine parks and reserves will eventually grow to at least 100. **Jasper Becker**