

# Biological controller

**Tim Thwaites** talks to a scientist who knows exactly what's brewing in Baghdad.

'Why do you hate Iraqis?' asked the cleaner in a Baghdad brewery. It was a tense moment for the leader of the United Nations biological weapons inspection team. Cooperation from the local people was riding on the answer. And this wasn't the sort of question or context for which any of her background or training had prepared her.

The inspector was Dr Annabelle Duncan, a research scientist from the CSIRO's Division of Chemicals and Polymers in Melbourne. After some quick thinking, she replied that she did not hate Iraqis. In fact, the people of Iraq had made her visits a pleasure, she said.

But the cleaner persisted: 'You are contributing to the sanctions against Iraq, and the sanctions are hurting my people.' Duncan explained that the sanctions would remain in place until Iraq could demonstrate it was not building biological weapons, and that it was her role to aid that process. 'I will keep coming back until those sanctions are lifted,' she said. The atmosphere eased, and the inspection team continued the job of tagging fermentation equipment so that it could be traced.

The brewery incident was one of many from a life rich in contrast. Six years ago Duncan knew nothing of biological warfare. Now she is the Australian Government's scientific adviser in the field. A seasoned weapons inspector, she has visited Iraq three times and expects to go again.

Trained as a microbial ecologist, Duncan leads a project on the microbiological production of an anti-cancer drug. She also flies twice a year to Europe to take part in multilateral negotiations over verification procedures for the Biological Weapons Convention. In January, the Australian Government awarded Duncan the Public Service Medal for her efforts.

Her involvement in disarmament arose almost by chance. The Department of Foreign Affairs and Trade had been receiving advice from staff at Duncan's CSIRO division on controlling chemical weapons. So, when biological warfare was thrust into the limelight by the Gulf War, Foreign Affairs asked its contacts in the division if there were someone who could provide similar advice. As the only microbiologist in the division, Duncan put up her hand.

Initially her job was to comment on scientific and technical papers covering matters associated with biological warfare. Then, in 1991, she was asked to act as an adviser at a meeting in Paris of the Australia Group, a body convened by Australia to monitor and limit the spread of the technology used to develop and manufacture biological arms. That's when Duncan's career in disarmament began in earnest. The Australian diplomat heading the delegation stood up at the meeting and handed charge to her.

Since that meeting, her involvement has snowballed. Not only does the Australia Group of 26 nations continue to meet, but the Biological Weapons Convention, endorsed by 117 nations, has embarked on establishing procedures to check that its signatories stick by their pledge to have nothing to do with offensive biological weapons.

The visits to Iraq began in 1994. Inspectors were needed to assess the facilities and expertise



available at research institutions and industrial sites. This information is collated with data from other sources to construct a picture of where weapons could be developed.

Duncan admits to having been frightened for the first 24 hours. 'We were advised that our rooms would be bugged, that our teams would be followed by security men, and that our bags would be searched one way or another,' she says. On top of this, there were likely to be terrorist bombings in Baghdad.

After that traumatic first day, however, she began to see things differently. 'It became obvious that the Iraqis had more to lose by harming us,' she says. 'We were followed, but the security men were good protection if people became aggressive. The experience forces you to assess where you stand and what you believe in. You begin to recognise that regimes make biological weapons, people don't.'

Flying about in helicopters above the sands of Iraq is a far cry from Duncan's day-to-day work in Melbourne, where her team is studying how to improve the production of an anti-cancer agent by fermentation. The project is part of the Chemical Discovery program which works at the interface between chemistry and biology, unearthing new drugs and agricultural pesticides.

She sees nothing odd about a microbiologist collaborating in chemical research. Quite the reverse in fact. 'A biochemical understanding of micro-organisms provides clues to chemists as to what they should be looking for in terms of biologically active compounds,' she says. 'And when new compounds are made, they are often tested first on micro-organisms.'

Still she has had her share of unusual projects. At the time when the new plastic banknotes were being introduced, she was asked to test them to see whether they were any cleaner than paper money. She found there were no more bugs on paper than plastic.



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