

'Biological bomb' experiments were hidden from people at risk and officials were told to lie, report Paul Lashmar and Tom McCarthy

# How Britain cast plague on paradise

## The toxic trail

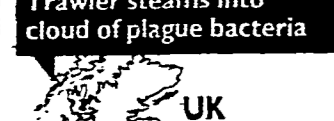
From the West Indies to the Western Isles

**Bahamas:** Potency of three virulent diseases tested on thousands of animals in 1954



**Antigua:** First Anglo-American experiments with toxic agents in 1948. At least one man infected

**Hebrides:** Plague and brucellosis inflicted on monkeys in 1952. Trawler steams into cloud of plague bacteria



**Salisbury:** Experiment in 1952 shows that being indoors offers little protection against an airborne biological agent

**Shanklin Bay:** Scene of preliminary biological warfare trials

- Germ warfare tested off Caribbean islands
- Airborne 'poison' released on Cathedral city
- Thousands of animals exposed to virulent agents

**B**RITAIN secretly carried out a series of biological warfare tests off Caribbean islands in the late 1940s and 1950s, placing the population at risk of contact with deadly bacteria and other toxic agents.

The experiments were concealed from the people living close to the Antigua and Bahamas test sites but have now been revealed in files released by the Ministry of Defence.

The disclosure comes in the same week as the Government's apology for the use of harmful pesticides in the war against Saddam Hussein and its agreement to fund research into Gulf war syndrome.

The governor of Antigua, then a British colony, agreed

to the first tests of biological agents in 1948, provided 'there will be no danger to the local population'.

But the MoD failed to consult local people and suggested that if the press became curious officials should lie. The military Chiefs of Staff saw the biological bomb as a 'novel weapon of great potency' and as effective 'weight for weight against unprotected human beings as atomic bombs'.

Other recently released documents show that in 1952 simulated biological warfare tests were carried out in secret at Salisbury, Wiltshire. The MoD says the substance released on the city was smoke, but parallel experiments carried out in the United States cast doubt



Protesters act out the effect of biological weapons, at the Porton germ warfare research centre during the Sixties.

on this claim. The *Observer* can also reveal that the MoD is suppressing a file on a biological warfare accident 44 years ago when the crew of a fishing trawler off the Scottish coast was doused with plague bacteria.

The official position has been that biological warfare

was studied to defend Britain against a biological attack. However, a Chiefs of Staff memo dated March 1952 argues that it could be used offensively after a nuclear strike. 'The possibility of employing biological agents immediately following an atomic attack should not be over-

looked. [Biological warfare] attacks on a highly disorganised population, of greatly lowered morale and diminished physical resistance, could be devastating,' it says.

The military was restricted by the 1925 Geneva Protocol banning the use of most types of biological and chemical

warfare. This moral code was described, grudgingly, as 'the problem of the international commitments'.

ANGLO-AMERICAN and Canadian experiments began in August 1948 at Parham Sound, off the coast of Antigua. Called Operation Harness, the tests were organised by Dr David Henderson, who had directed the 1942 anthrax tests that contaminated the Scottish island of Gruinard.

'Clouds of toxic agents' were released to drift across animals in a dinghy being towed behind the Navy transport ship HMS Ben Lomond. Although the 22 experiments were considered a success, proving that the 'toxicity of agents' was 'many times greater than that of any known chemical agent', the operation had significant safety flaws which the Government attempted to play down.

The MoD had obtained approval for 'toxic trials in the open sea' but the documents show that secret experiments were conducted 'under the lee of a neighbouring island which raised additional safety problems'.

Furthermore, despite a statement that there were 'no unfortunate incidents', the declassified sources reveal that at least one man was infected by toxic bacteria. For the first time the agents used are revealed. They included *Bacterium tularensis*, which was said to have 'considerable possibilities'.

The Chiefs of Staff saw biological warfare as having a 'moral advantage' over the indiscriminate destruction of nuclear war, while being as effective against unprotected humans as atomic bombs.

The research programme into this 'very economical' and 'humane weapon' rapidly accelerated. General Kenneth Crawford, head of the Biological Warfare Subcommittee, said there was 'no time to lose'.

The MoD files on the tests were deemed so sensitive that they were withheld after the expiry of the usual 30-year period.

THE BRITISH military was meanwhile preparing for domestic germ-warfare trials.

After preliminary experiments in Shanklin Bay, Isle of Wight, the 'highly infective' brucellosis and *Pasteurella pestis*, the ancient Black Death, were used in tests off the Scottish coast.

Between June and September 1952, Operation Cauldron tested toxic agents on monkeys 'about half a mile off the Hebrides'. But the carefully planned experiments very nearly ended in disaster.

At least one file, entitled 'Incident during Operation Cauldron', is retained. Eleven years ago the *Observer* revealed that, just as spraying began in one of the final experiments, Navy officers were horrified to see the 400-ton Fleetwood trawler *Carella* rounding a nearby island, ignoring the notified safety zone. The *Carella* steamed straight into the path of a cloud of plague bacilli and continued on its course to-

wards Iceland. A destroyer was hastily dispatched from the Clyde, 400 miles to the south, with supplies of vaccine. As pneumonic plague takes four to six days to incubate, and up to 100 hours more to kill, the destroyer spent the incubation period following the *Carella* and tuning to its radio for distress calls.

Fortunately the aerosol plague droplets dispersed over very short distances, and the crew was not infected. Had the spray been released later, it might have been an entirely different story. The documents on this incident were considered so sensitive that they were kept in a special safe at the Admiralty.

OTHER released documents reveal that in 1952 the Porton Laboratory, Wiltshire, secretly tested the 'travel of [biological warfare] clouds in built-up areas'. One document states: 'Large-scale experiments in a built-up area (Salisbury) have proved that the dosage received inside the buildings is roughly similar to that outside, and that little protection is afforded by houses.'

The MoD claims that smoke was the substance used. However, in US tests in San Francisco in 1950, a 'non-lethal' bacterium was used and was found to have been breathed in by almost all of the city's 80,000 inhabitants. Subsequently there were allegations that the bacterium was responsible for the deaths of vulnerable individuals. In 1963, Porton Down scientists conducted secret germ-warfare tests in the London Underground using spores of a 'harmless' bacterium.

Julian Perry Robinson, of the Science Policy Research Unit at Sussex University, said it was unlikely that the Salisbury tests involved a non-toxic pathogen but the idea could not be excluded.

Similarly, Dr Alastair Hay, a member of a working group on biological weapons at Leeds University, said it was very difficult to say exactly 'what was used, although it 'would not surprise me that non-toxic simulants were used'.

The Government feared that the Kremlin could develop an 'absolute weapon' using biological agents. The Chiefs of Staff could 'not be complacent' because the USSR would not hesitate to 'carry out biological warfare trials on humans'.

The British programme examined both the defensive and offensive capabilities of biological agents — which are recorded as including anthrax, *Bacterium dysenteriae*, polypeptides, *Bacterium typhoseum* and the tubercle bacillus — even though the 1925 Geneva Convention explicitly forbade bacteriological methods of warfare.

The Chiefs of Staff saw the 'international commitments' as a 'problem' but not an obstacle, and insisted that 'further field trials must be done'. In 1952, Operation Hesperus repeated the Hebridean experiments and expanded the project to include *Bacterium tularensis* but the focus of Porton's work shifted back to the Caribbean.

IN 1954, the colony of the Bahamas provided an ideal location for further MoD waterborne trials. Between February and May, Operation Ozone experimented on several thousand animals to test the potency of the brucellosis bacterium and also of *Bacterium tularensis* and Venezuelan equine encephalomyelitis, a highly infectious disease producing crippling pain, nausea and vomiting. This pathogen was to be tested in Vietnam in 1964.

Similarly, from November 1954 until April 1955, the scientists secretly tested smallpox, and the closely related but more effective *Vaccinia* virus. The Chiefs of Staff were relieved to report that the Bahamas tests had maintained operational security and had not been revealed to the locals, confessing that they would have been seen as a 'most embarrassing intrusion'. The Bahamas did not gain independence until 1973.

Regular savers wanted. Big

# REWARD

paid.

Bonus Saver  
pays

**6.1%** gross p.a.

from just  
**£20 per month.**

(Including bonus)

You might have thought that if you wanted to earn big interest rates, you had to have big savings. So you'll probably be very happy to find out that for once, you were wrong.

If you open a Bonus Saver account at Nationwide, you can save between £20 and £1000 a month and start earning those big interest rates you were after, straight away.

By saving as little as £20 each month you can

get a savings rate of 6.1% gross p.a. This includes a bonus of 3.25% which we'll give you every 12 months after you open your account, as long as you keep making monthly deposits and don't make any withdrawals. And Bonus Saver is not only competitive, it's also flexible.

You can miss one of your payments over a 12 month period and still get your bonus. So, if you're

a small saver who's looking for big interest rates,

simply come down to your local Nationwide branch and find out more about our Bonus Saver account. You'll find it's a very rewarding experience.

In tune with people

**Nationwide**

THE BUILDING SOCIETY.

Find us on the Internet at <http://www.nationwide.co.uk>

## 'As effective as atomic bombs'

**Brucellosis (or 'undulant fever')** Considered a 'humane' weapon because it is rarely fatal. It causes chills and undulating fever, migraine, loss of appetite, depression, acute exhaustion, sweating and aching joints.

**Plague (*Pasteurella pestis*)** Excruciating pain, skin affliction, swelling of lymph nodes, ulcers, delirium, fever and death.

**Smallpox (*Variola virus*)** Acute contagious disease with fever and pustules leaving survivors with perma-

nent scars. Often fatal. The closely related *Vaccinia* virus was also tested in the Bahamas and considered of 'major importance'.

**Tularaemia (*Bacterium tularensis* or 'rabbit fever')** Like brucellosis, not necessarily fatal to humans. Symptoms include high fever, chills and general weakness.

**Venezuelan equine encephalomyelitis** Highly infectious disease causing nausea, vomiting, chills, headaches, extreme muscle and bone pain.

The 6.1% gross p.a. rate is made up of 2.85% gross p.a. interest and 3.25% gross p.a. bonus, which is guaranteed until the end of 1997. The bonus will only be paid if between £20 and £1000 is saved each calendar month for at least 11 out of 12 months in a year. Six withdrawals a year are allowed for one withdrawal a year. Interest is paid monthly to your account. For full terms and conditions see our leaflet in one of our branches. Interest rates may vary but are correct at time of going to press. Rates quoted are gross p.a. and, unless you are registered as eligible to receive gross interest as required by the Finance Act 1988, interest will be paid after the deduction of tax at the appropriate rate. Nationwide is a member of the Building Societies Ombudsman Scheme and subscribes to the Code of Banking Practice. Nationwide Building Society, Nationwide House, Papers Way, Swindon SN38 1NW.