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A poisonous kind of justice

When Dr Thomas Butler noticed vials of plague bacteria were missing from his Texas university lab, he did the right thing and informed the FBI - only to find himself the prime suspect in a bio-terrorism investigation. Now he's in jail, but his fate was sealed by paranoia and prejudice. Rose George investigates

Published: 31 August 2004

It was a January weekend in 2003. Dr Thomas Butler, a world-renowned expert on bubonic plague, had called in at his laboratory at Texas Tech University. The 62-year-old microbiologist had worked with the disease for decades and always kept a meticulous record of what was in his lab and where. That day, he noticed that 30 vials of plague were missing. It was the beginning of a nightmare.

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"I've sat down with Tom's children," says Dr Butler's attorney, Jonathan Turley, a law professor at George Washington University in Washington DC. "I've tried to explain what has happened to their father, but I can't. It's about as rational as getting hit by a locomotive."

Eighteen months on, Thomas Butler is no longer a doctor. He turned in his medical licence before it could be taken from him. His family - wife Elisabeth and four children, including a five-year-old son - are broke. He has lost his job and his lab, and he sits in a medium-security prison in Fort Worth, Texas. He is the most notorious scientist in the world, and probably the recipient of the most heavy-handed meting out of criminal justice in recent memory.

After Butler had spent the weekend looking for the vials, he did what he was supposed to do and called the university security officer. Together they searched again. Maybe the containers had been misplaced or accidentally sterilised. It happens in labs: vials go through the autoclave at the end of a busy day by mistake. It's no big deal. But Butler didn't find them, and the FBI was called in.

Within 48 hours, 60 agents had descended on Lubbock, Texas, a town of just 200,000 inhabitants. This was the largest single deployment of FBI personnel since September 11. Butler was interrogated for two days straight. Agents searched his house in front of his children. They asked his wife whether her husband was in sufficient financial distress that he would have sold plague to terrorists. "In Lubbock!" says Turley. "You can throw a stick at any corner in Mozambique and get plague vials. You can get it easily in Russia. What terrorist is going to risk a trip to Lubbock?"

"It's a gross overreaction," says Donald A Henderson, a smallpox expert who ran President Bush's emergency response programme against bio-terror attacks in 2001. "There's plague all over the [US] South-west. It's endemic in animals, and there are a dozen cases reported in humans every year."

But the Department of Justice's blood was up. It was only two years since five people had been killed by letters laced with anthrax, and the entire weight of the nation's investigative powers had failed to catch the sender. Any whiff of bio-terrorism got the full attention of the Attorney General, John Ashcroft, especially as the letters are widely believed to have been sent by someone working as a biological weapons scientist.

Ashcroft immediately briefed the President on the missing plague. It did not matter that the FBI soon came to the conclusion that the vials had probably been destroyed accidentally. These 30 containers of *yersinia pestis* were now a national emergency, and Dr Thomas Butler, who had written a paper in the 1970s that pioneered oral rehydration therapy for diarrhoea and who could thus, with no arrogance, claim to have saved millions of lives, was now Dr Plague, suspected bio-terrorist.

Dr Plague cooperated fully with the investigation. He even waived his right to an attorney. He had worked for the government all his life, since his days as a navy doctor in Vietnam, and he trusted them. "I was tricked and deceived," said Butler in an interview with the CBS television show *60 Minutes* last year. "I was naïve to have trusted them and the assurances they gave me."

The assurances were simple. To avert public panic, the FBI told Butler, he should sign a document stating that he had accidentally destroyed the vials. He would then be able to get back to work. He did so, and was promptly arrested. "Not for anything to do with the vials," says Turley. "But for lying to the FBI. It made no sense. He would never have created such controversy to conceal the accidental destruction of vials. Vials are accidentally destroyed in labs every day. All he would have had to do is get more plague."

But Butler had signed and things got even worse. House arrest; constant monitoring; nine months of intense pressure. According to his lawyers he was offered a deal - plead guilty and get six months in jail. He wouldn't plead guilty, he said, because he wasn't guilty. So the prosecutors threw the book at him. "It's called count stacking," explains Turley. "They throw as many counts as they can at the jury and hope they'll split the difference."

By the time the case went to trial last November, Butler was facing 69 charges and life in prison. But most of the offences had nothing to do with the missing plague. He was accused of fraud; embezzlement; tax evasion. And most of the charges came from his employer. Thanks to a complicated distinction between "clinical" fees (that scientists are supposed to pay universities) and "corporate" fees (for external consultancy, which they're not), five months after his original indictment bosses at Texas Tech decided that Butler owed them \$1m. Thomas Lehman, a geologist at the university, made his feelings clear about his employer in two open letters about the Butler case. "I believe that Texas Tech has committed a great injustice to a good man. I do not know the Butlers very well, but I know a smear campaign when I see one."

Even to someone not familiar with the intricacies of university politics, this looked like a clear case of an institution throwing its professor to the wolves. "I think there's something else behind it," says Edward Hammond, who runs the US arm of the global bio-defence watchdog the Sunshine Project. "Texas Tech gets huge grants from the US army. The manner in which they turned on Butler certainly had something to do with that." Turley concurs. "It was made very clear that if they didn't cooperate, the grants would evaporate."

The scientific community was in uproar. To date, several Nobel prizewinners - Peter Agre, Sidney Altman, Robert Curl and Torsten Wiesel - have spoken out in support of Butler and have donated to his legal fund. The National Academy of Sciences, not known for its bleeding-heart politics, has made Butler one of only two American scientists it has ever publicly taken on as a cause (the first was Wen Ho Lee, the Taiwan-born American physicist wrongly accused of espionage in 1999). There probably isn't a single microbiologist on earth who doesn't know about Tom Butler, and doesn't think it could happen to them, too. "The number of scientists I have talked to," says Henderson, "who have worked occasionally with a particular organism...They don't want to have that organism in the lab any more. It's a deterrent."

During the case, prosecutors compared Butler to "a cocaine dealer smuggling illegal drugs into the country". He was called an "evil genius". In fact, far from being suspected of bio-terrorism, he was only being accused of not properly transporting plague samples. Specifically, it was suspected that he had brought back quantities of the disease from Tanzania in his hand luggage. But this, historically, has not been unusual. Like countless other scientists, Butler decided that the safest way to carry samples was on his person. "In fact," he told CBS, "there's an expression that's been used: VIP - vials-in-pocket - indicating that sometimes they're just carried in a coat."

Donald Henderson can manage a chuckle at this. From his decades running the World Health Organisation's smallpox campaign, he can sympathise. "I used to carry pathogens round and store them in the fridge. As long as they weren't taking up space from the milk, my wife didn't mind."

But it was very different then. After the anthrax letters and September 11, the world of biological weapons research

has no time for such scientific eccentricities. US-based scientists working with "select agents" - a list of 80 pathogens categorised under the 2002 Bioterrorism Act - have to register with the US health department's Centers for Disease Control. They also have to pass FBI checks, as do their labs. Similar measures have been adopted in the UK, but "not to that level of paranoia", according to one eminent British microbiologist. "It's become very difficult to send things between labs any more, and even more so between countries. We all accept that if you work with anthrax or any select agent, you have to be careful with paperwork. But it makes things very difficult." The Butler case has not helped matters. Jonathan Turley has met scientists at conferences who confessed that they didn't send samples to the US during the Sars epidemic in case they contravened regulations. "They've got a clear message from the Butler case that the US is a threatening environment to work in," he says.

This is not reflected in funding. Since 2000, money for biological weapons research has increased 30-fold, with \$14.5bn spent on bio-weapons projects since 2001. The number of projects mentioning bio-terrorism on the database of the National Institutes of Health, the public science grants body, has jumped from 25 in 2000 to 665 last year. It's a gold rush.

It's certainly disproportionate, says Richard Ebright, a professor of chemistry at Rutgers university and a bio-safety expert, and it might even be dangerous. "The increase exceeds the budget of the Manhattan Project (the US programme to develop the atom bomb), adjusted for inflation. It exceeds all the funds for Aids research, and all non-Aids research combined. It's a tremendous diversion of funds to research agents that have no public health implications outside of bio-weapons. They aren't diseases that people actually die of. You can take a select agent and make tens of people die. But hundreds is difficult." In some instances a single bacterial cell is enough to cause death, but these cells have to be grown, processed and weaponised. "There is a potential concern," Ebright concedes. "But not one that justifies this level of response. This is money diverted from public health for political purposes."

And the political purpose is paranoia. Why didn't anyone sensible withdraw the laughably weak case against Butler? "They couldn't afford to," says Turley. "It would have been a personal embarrassment for John Ashcroft." An FBI agent told one eminent microbiologist that they were going to "make an example" of Butler. His case would send a clear message that scientists working with materials of interest to bio-terrorists weren't above the law. But the jury's message was a lot muddier than the FBI would have liked.

The jury took only 11 hours to reach a verdict on 69 counts, and it was an odd one. Butler was acquitted of all plague-related charges except for three relating to the transportation of samples (in essence, he was going to jail for ticking the wrong box on a courier package). They found him guilty on some contractual charges, but acquitted him on other charges relating to the same contract. "These are minor contractual disputes!" says Turley, still incredulous. "They could have been an internal university matter. We haven't found a single case in history like this. The government has taken civil university rules and criminalised them." Thomas Butler was sentenced to two years' imprisonment.

He had pleaded for mitigation. "During my whole life, I've helped people," he told the court. "Please let me go back to helping people." Notably, to helping the US government develop an effective antibiotic in case bubonic plague is used in a terrorist attack. This was what he was doing at the time of his arrest.

Despite the sentence, Butler's plea may have had an effect. "The jury was the most likely [group] to be affected by the possibility of the plague on the loose in Lubbock," says Turley. "But they overturned nearly all the plague charges. They did not believe the testimony of six FBI agents." Meanwhile District Judge Sam Cummings, whose reputation for tough sentencing has earned him the nickname "Maximum Sam", imposed a record number of "downward departures", allowing him to levy sentences less the minimum stipulated by law. He also decided that Texas Tech was owed just \$38,675, a far cry from the \$1m it was after. The government wanted ten years; they got two. They've already filed an appeal to increase the sentence. Butler's lawyers are preparing their own appeal.

The scientific community is still reeling. "Rather than demonstrating the importance of strict care in the handling of research materials," wrote the Nobel prizewinners, "the determination to convict Dr Butler and put him in jail sends a strong message to the scientific community. It says: this 62-year-old man, who voluntarily reported missing material and cooperated with federal investigators, is now being repaid with a ruined career and a personal cost from which he and his family will never recover." It also says that the next time a scientist misplaces 30 vials of a dangerous pathogen, they're hardly likely to call the FBI. It says that the biggest casualty in the Tom Butler case might be goodwill between the administration and the bio-weapons community, just when it needs it most.

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