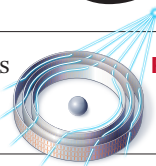


NEWS IN FOCUS

ANIMAL RESEARCH Scientists debate the kindest laboratory kill **p.130**

MEDICAL ETHICS Historic deal forged over famous HeLa cell line **p.132**

ASTRONOMY Technique offers way to gauge black hole spin **p.135**



PHYSICAL SCIENCES The weird world of metamaterials **p.138**



Chemical engineer Kemal Gürüz was taken to court in Turkey as part of controversial terrorism trials.

POLITICS

Scientists swept up in terrorism trials

Turkish government ignores calls that trials are unfair.

BY ALISON ABBOTT

It was so emotional — we were crying after we left him,” says Hans-Peter Zenner of his visit to academic Fatih Hilmioğlu in the Silivri prison, some 80 kilometres from Istanbul.

Zenner, a physician at the University of Tübingen in Germany, travelled to the penal

facility in February as part of a small delegation to investigate cases of Turkish academics charged with terrorism offences. The delegation had been commissioned on behalf of an international human-rights network representing academics and scholarly societies including the US National Academies of Science and the German National Academy of Sciences Leopoldina. It concluded in its draft report on 1 August that

the scientists had not received fair trials.

On 5 August, the defendants — all former or current university rectors — received harsh sentences. Hilmioğlu, a physician and former rector of İnönü University in Malatya, was sentenced to 23 years in prison on charges of conspiring to destabilize the government through political violence. Four other academics — including a transplant surgeon and chemical engineer — were given sentences of between 10 and 15 years. Another, who had been in detention for more than 4 years, was released despite being sentenced to 12 years and 6 months in prison.

The delegation had concluded in its report that “standards of justice failed”, and that in no case did the evidence brought by prosecutors “support the conclusion that any of our ... colleagues is guilty of committing the crimes of which they have been accused”. It called for an amnesty for all six academics, or for each to receive a new trial “that meets international fair trial standards”.

“It’s terrible — though I hadn’t been optimistic,” says Carol Corillon, executive director of the International Human Rights Network of Academies and Scholarly Societies in Washington DC and co-author of the report along with Zenner and Peter Diamond, a Nobel prizewinning economist at the Massachusetts Institute of Technology in Cambridge. “It is a miscarriage of justice — there was no evidence at all against any of them. We have not had time to think of our next step, but we never, ever drop a case.”

“This international delegation reflects what many of us believe — that there were many irregularities,” says economic historian Şevket Pamuk, who is foreign secretary of the Bilim Academy in Istanbul, Turkey’s independent national academy of sciences. “Many have argued that evidence was fabricated.”

The scientists were sentenced as part of a trial code-named Ergenekon, in which 275 people, mostly military personnel, were accused of participating in a purported ‘deep-state’ network that the government believed had intended to facilitate a military coup. Observers describe the trial as a stand-off between a secularist old guard, which held power until 2003, and the current mildly Islamic government of Recep Tayyip Erdoğan. Erdoğan has increased his majority in parliament since first taking power, and is becoming more confident, says Pamuk. Critics suspect that the prominent academics in

► the Ergenekon trial are being punished for stances unrelated to terrorism: all six are staunch secularists and have defended secularism by, for example, seeking to uphold a ban on headscarves in Turkey's universities.

The delegation's report also describes the plight of scientists, including one of the six just sentenced, accused in three further major political trials — known as Sledgehammer, the KCK Operations and the Postmodern Coup. All the political trials had been assigned to special anti-terrorism courts, but these were abolished last year following criticisms that they ignored evidence. Many observers believe that the trials, which the report described as “highly irregular”, were used as an excuse to round up and silence government critics.

The Sledgehammer trial, which involved 365 people charged with attempting a military coup in 2003, ended last year. Industrial engineer Faruk Yarman, one of just two civilians to be charged, was sentenced to 13 years in prison. The report calls for his release.

Political scientist Büşra Ersanlı was arrested in 2011 as part of the KCK Operations, and charged with membership of a violent Kurdish-rights organization. She was released from pre-trial detention in July 2012; the report calls for a fair and expeditious trial for her.

And Kemal Gürüz, one of the six scientists sentenced this week, was arrested and detained in June last year as part of the Postmodern Coup trial (see *Nature* <http://doi.org/h47>; 2012).

A chemical engineer who was head of Turkey's Council of Higher Education from 1995 to 2003, Gürüz had been a vociferous proponent of the headscarf ban. He attempted suicide in prison in June this year. This week, he was sentenced to 13 years and 11 months in prison in the Ergenekon trial; he is still awaiting trial under the Postmodern Coup.

Pamuk, who holds joint positions at the Bosphorus University in Istanbul and the London School of Economics, says that many academics believe scientists such as Gürüz have been drawn into terrorism trials for reasons of revenge. “Many were university rectors,” he says. “When they were powerful, they may have offended those who are now close to this government and are now in a position to retaliate.” Pamuk expects all the scientists sentenced in the Ergenekon trial to appeal, but says that they are unlikely to win.

Guniz Gürüz, a chemical engineer at the Middle East Technical University in Ankara and Kemal Gürüz's wife, told *Nature* that pressures on the family have been extreme. “We are going to appeal,” she said through tears after hearing his long sentence, adding, “Kemal has never had a proper explanation for why he was detained.” ■



Much of the discussion about the humane killing of research animals centres on rodents.

ANIMAL RESEARCH

Best way to kill lab animals sought

Researchers debate most humane methods of dispatch.

BY DANIEL CRESSEY

Killing research animals is one of the most unpleasant tasks in science, and it is imperative to do it as humanely as possible. But researchers who study animal welfare and euthanasia are growing increasingly concerned that widely used techniques are not the least painful and least stressful available. This week, experts from across the world will gather in Newcastle upon Tyne, UK, to debate the evidence and try to reach a consensus.

“There are lots of assumptions made about the humaneness of various techniques for euthanizing animals,” says Penny Hawkins, deputy head of the research animals

department at the Royal Society for the Prevention of Cruelty to Animals, a charity based in Southwater, UK. “Sometimes an animal might not appear to be suffering, but might be conscious and suffering.”

Much of the debate centres on rodents, which make up the vast majority of research animals. Current techniques for killing them include inhalation methods — such as chambers that fill with carbon dioxide or anaesthetic gases — and injecting barbiturates. Physical methods include cervical dislocation (breaking of the neck), or decapitation with specialist rodent guillotines (see ‘Methods used to kill lab rats’).

Experts hotly debate which method is

PROS AND CONS

Methods used to kill lab rats

Some methods recommended by the American Veterinary Medical Association.

Barbiturate injection: Fast-acting, but injection may cause pain.

Inhaled anaesthetic (halothane, isoflurane, sevoflurane or desflurane): Useful when restraint of animal is difficult.

Carbon dioxide: Acceptable, but chamber must be filled over several minutes and not

pre-filled. Death to be verified afterwards or ensured by physical method.

Cervical dislocation: Causes rapid death, but skill must be learned.

Decapitation: Useful when tissues must be free of euthanasia chemicals.

Unacceptable: Nitrous oxide alone; nitrogen or argon asphyxiation (unless animals already anaesthetized); opioids.

PASCAL GOETGHELUCK/SPL