



55p Thursday April 8 2004 Published in London and Manchester guardian.co.uk

The Guardian

Battles rage from north to south

Dozens die in bomb and missile attack near mosque

Militia leader warns: Iraq will be new Vietnam

Blow to US as ayatollah fails to condemn uprising

Jonathan Steele in Baghdad and Ewen MacAskill

The US-led coalition entered the most dangerous phase yet of its occupation of Iraq last night as the Sunni and Shia uprisings spread from Kirkuk in the north to Kut in the south.

With the worst fighting since George Bush formally declared the war over last May, the coalition lost control of several areas. The most humiliating reverse was at Kut, when Ukrainian troops were forced out by a Shia militia.

The US, which was careful during the war not to hit holy sites, fired a missile and dropped a 500lb bomb to breach a wall enclosing a mosque in Falluja, an attack that will further inflame the uprising. Reports put Iraqi deaths at between 25 and 40.

The death toll in the past few days has risen to 33 Americans (the Pentagon confirmed that 12 marines had died in Ramadi on Tuesday, the US's worst day since the war), two other members of the coalition forces, and more than 190 Iraqis. The US suffered a further five casualties during the six-hour assault on Falluja.

The US defence secretary, Donald Rumsfeld, said last night some US troops scheduled to leave Iraq might stay longer, and for the first time raised the possibility of troops staying for more than a year. He denied the violence was a popular uprising and said it was the work of a few "thugs, gangs and terrorists". He repeatedly called Moqtada al-Sadr, the cleric leading the Shia uprising in southern and central Iraq, a murderer.

Mr Sadr had earlier declared: "Iraq will be another Vietnam for America and the occupiers."

Mr Sadr, who controls the Mahdi Army militia, said he opposed the transfer of power to the provisional Iraqi government on June 30 and wanted power given to "honest Iraqis".

Brigadier General Mark Kimmitt, deputy director for coalition operations, promised "deliberate, precise and powerful offensive operations to destroy the Mahdi Army".

The US is hunting for Mr Sadr, who has taken refuge in the holy city of Najaf. He was given a deadline of 5pm yesterday to surrender.

Gen Kimmitt defended the attack on the mosque, saying the rules of engagement allowed US forces to return fire. "The enemy were abusing the mosque and everything it stood for. When you start using a religious location for military purposes, it loses its protected status."

The coalition position worsened considerably last night when the most senior cleric in Iraq, Ayatollah Ali al-Sistani, a moderate, refused to condemn Mr Sadr's uprising. Instead, he condemned "the methods used by occupation forces in the current escalating situation in Iraq ... and any action that disturbs order and prevents officials from carrying out their duties".

The US-appointed governing council also urged the Americans not to make the crisis worse by excessive force.

"More violence will cause more violence and this will be an endless spiral. We all made these points," Adnan Pachachi, a council member and former foreign minister, said. "By surrounding Falluja and pounding it they reacted with greater force than we expected."

Although the White House and Downing Street denied there was a crisis, Mr Bush was on the phone early yesterday to Mr Blair. The prime minister is to fly to New York next Thursday for talks with the UN secretary general, Kofi Annan, and then to Washington for discussions with Mr Bush.

Although Mr Bush and Mr Blair are presenting a united front there are differences of approach to Iraq, and the British government is concerned that Mr Bremer repeatedly ignored the advice of the senior British representative in Iraq, Sir Jeremy Greenstock, who recently retired.

In Kut, Ukrainian forces withdrew from the city after overnight gun battles in which 12 Iraqis died. One Ukrainian soldier was killed and five were wounded. Mr Sadr's followers seized weapons stores. A South African working for a British



A wounded US marine being carried to a helicopter yesterday in Ramadi, where 12 marines died on Tuesday, the worst day for US casualties since the war Photograph: Maurizio Gambarini/EPA

security company was killed. In Kirkuk fighting left eight Iraqis dead and 10 wounded.

The Mahdi Army was in virtual control of Kufa and Kerbala. Clashes with Polish patrols in Kerbala left at least seven Iraqis dead, including

Mr Sadr's representative and two Iranian pilgrims.

In Najaf the Mahdi fought Spanish soldiers, and a taxi-driver was killed. At Baquba it brought down a US helicopter.

In Baghdad's Sadr City, clashes left four Iraqis dead

and seven others wounded. Two policemen were killed at Yousiffiya, south of Baghdad.

Iraq uprising, page 4 Rice on eve of testimony, page 13 Seumas Milne, page 24 guardian.co.uk/iraq

'We will fight until the end, until each one of them dies'

Rory McCarthy in Garma

In the distance a US military observation drone buzzed past, and below, at a quiet crossroads in the village of Garma, shopkeepers watched unperturbed as dozens of masked, heavily armed men stood around chatting about the fight for which they said they longed.

Just a few miles away on the eastern edges of the Iraqi town of Falluja, US fighter jets dropped a barrage of a dozen bombs that shook the ground with a shuddering tremor.

It was the third day of the "overwhelming" military response US commanders had promised for Falluja, the Sunni town 30 miles west of Baghdad that more than anywhere else in this country has come to symbolise resistance against the US occupation.

Accounts emerging from the

city last night suggest it has turned into the most vicious and costly of America's battles in postwar Iraq.

One of the fighters stepped forward. He was dressed in blue jeans and a black shirt, a red-and-white keffiyeh scarf covering the whole of his face. He was young, and as he spoke he rested a loaded rocket-propelled grenade launcher awkwardly on his right shoulder.

"The Americans are accusing the people of Falluja of being terrorists," he said, "while they themselves are harassing our women and girls, attacking our families, and terrifying the civilians. We told them it was forbidden for Americans to enter Falluja, but they are not respecting our words."

Encounters with Iraq's self-styled resistance, the "muqawama", are rare, but their message is always the same. For the past year they have been

fighting to force US soldiers out of the Sunni towns north and north-west of Baghdad and ultimately out of Iraq itself, whatever chaos that may bring.

It is a violent, little coordinated movement with no political agenda and based on Islamist or nationalist sentiment together with notions of tribal honour and revenge.

"The Americans think we are afraid, while we recognise them as cowards," said the young man, the commander of the small band of fighters in this village. "We have many heroes who are standing here and elsewhere. We will not be afraid of their tanks and their weapons and their other equipment. We will stay until we defeat them."

Suddenly the gunmen scattered, unnerved by the sound of an approaching US helicopter. Villagers who

Flashpoints



- Baghdad Sadr City: clashes kill four Iraqis and wound seven others
Falluja Fierce fighting. At least 25 killed in US bomb and rocket attack on mosque
Ramadi 12 marines killed on Tuesday
Kirkuk Fighting leaves eight Iraqis dead and 10 wounded
Baquba Mahdi Army fights coalition forces in the streets. US helicopter brought down by small arms fire
Kut Ukrainian forces withdraw from city after gun battles in which 12 Iraqis die. South African working for a British security company is killed
Kufa Mahdi Army in virtual control
Kerbala Clashes with Polish patrols, at least seven people killed. Senior official in Sadr's office in the city among the dead, as well as two Iranian pilgrims
Mosul and Rashad Peaceful protests in support of Sadr
Najaf Militiamen battle Spanish soldiers. Taxi driver killed in the crossfire. Sadr aide says number of coalition soldiers captured
Yousiffiya Two policemen killed

Hospital patients forced to watch TV they can't turn off

John Carvel Social affairs editor

When thousands of NHS hospital patients were offered television sets beside their beds as part of a deal with a private company, it was billed as a triumph for the government's drive towards "patient power".

The only problem, as the Department of Health acknowledged yesterday, was that the patients lacked the

power to turn the sets off. The TVs were not equipped with an off switch, and cast their flickering light for a fixed 15 hours a day.

The sets were installed by Patientline, a private firm chaired by Derek Lewis, former director general of the prison service. Their captive audience includes 17,500 patients in 32 hospitals across the country which were among the first to adopt proposals in the NHS plan to

provide more modern facilities, including a wide range of cable TV and radio stations.

The problem with the TVs was identified by the Health Service Journal. It reports today that the sets come on automatically at 6am or 7am and close down at 10pm. Patients pay £3.20 a day for the full range of programmes, with reduced rates for the over-60s and a free service for children.

But those not wanting to

subscribe do not escape: they get trailers for the service and messages from the hospital authorities instead.

A company spokesman said the failure to provide an off button was "an accident" that was rectified in more recent installations at the bedsides of 38,500 patients in another 83 hospitals.

He said that the sets were mounted on an arm similar to an Anglepoise lamp. Patients who could not stand watching

the programmes any longer could use the contraption to point the screen at the wall.

If they were still disturbed by the flickering light, they could summon a company representative to disable the system, but that meant it could not be turned back on again.

Robert McMaster, a patient at Royal Berkshire hospital in Reading, said it was "irritating to be subject to this continuous and unwelcome stimulation, particularly at

night or when trying to rest". A Department of Health spokeswoman said that a few patients suffering severe forms of epilepsy could be affected by constant exposure to television, but in those cases doctors could order the sets to be disabled.

A Patientline spokesman said: "These complaints have taken us by surprise. We've been operating the system since 1995 and I've not known of this criticism before."



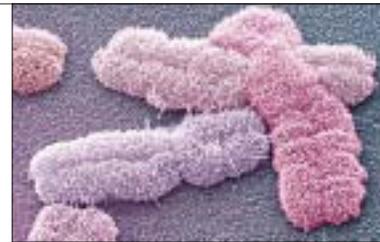
Quick Index Weather 28 Letters 25 Cryptic Crossword 34 Quick Crossword G2, 23 Today's TV G2 back page



Advertisement for Sofa Workshop featuring a yellow flower and text: YOU SAY: My old sofa's sprung has definitely sprung. WE SUGGEST: Bounce back with a new sofa and save money this Easter. Easter Specials Enjoy at least 10% OFF SALE PRICES* STARTS GOOD FRIDAY SOFA WORKSHOP



Science
Environment
Medicine
Technology



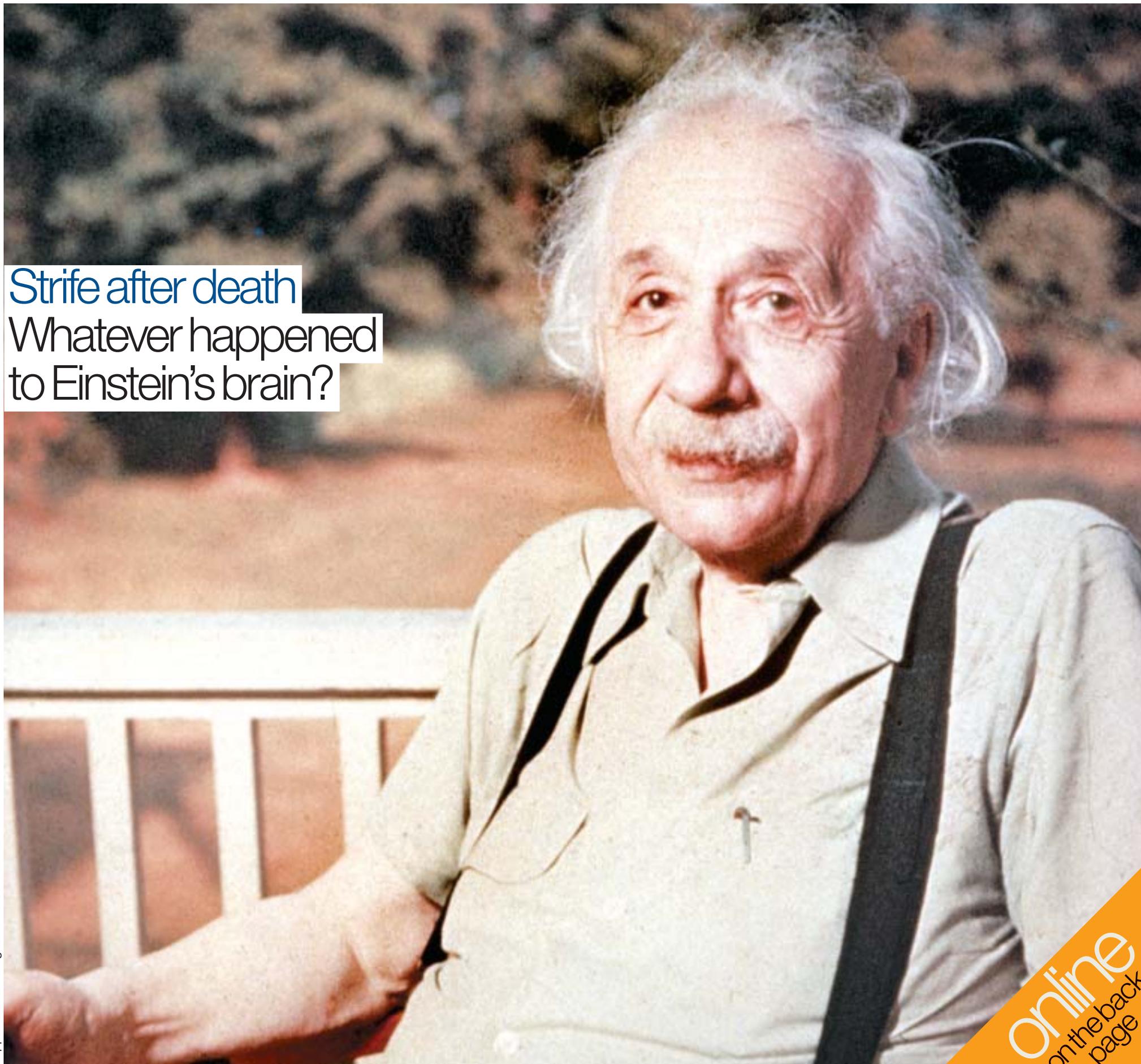
At home with the
ant hill mob
Page 10

How we're all
programmed for
extinction
Page 6



The **Guardian** | 08.04.04 | Published in association with **Nature** | guardian.co.uk/life

Strife after death
Whatever happened
to Einstein's brain?



Philippe Halsman/Magnum Photos

online
on the back
page

The final countdown

All Earthly species will eventually die out, we're being told. Kate Ravilious asks if humans can possibly endure

Every species seems to come and go. Some last longer than others, but nothing lasts forever. Humans are a relatively recent phenomenon, jumping out of trees and striding across the land around 200,000 years ago. Will we persist for many millions of years to come, or are we headed for an evolutionary makeover, or even extinction?

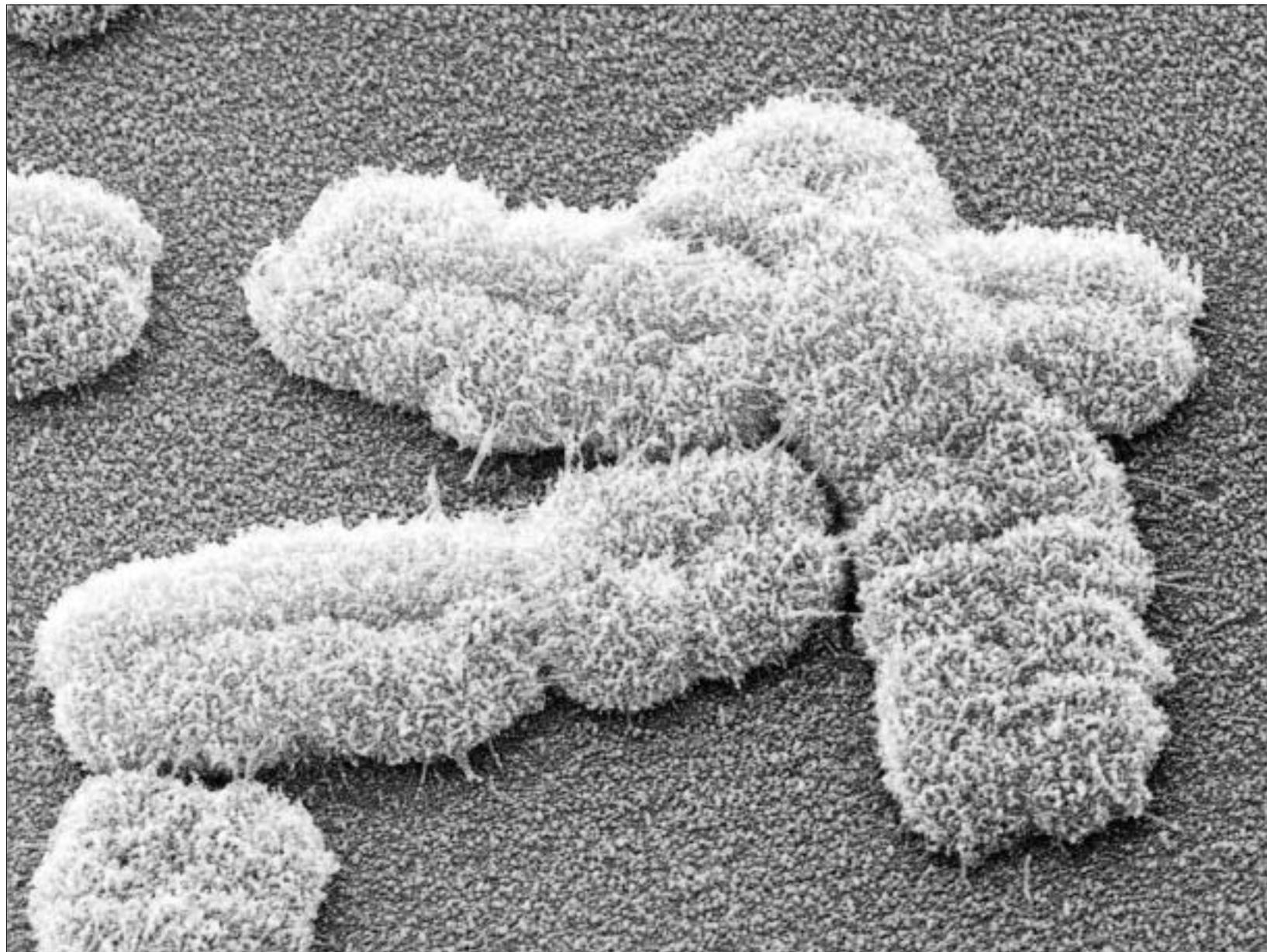
According to Reinhard Stindl, of the Institute of Medical Biology in Vienna, the answer to this question could lie at the tips of our chromosomes. In a controversial new theory he suggests that all eukaryotic species (everything except bacteria and algae) have an evolutionary "clock" that ticks through generations, counting down to an eventual extinction date. This clock might help to explain some of the more puzzling aspects of evolution, but it also overturns current thinking and even questions the orthodoxy of Darwin's natural selection.

For over 100 years, scientists have grappled with the cause of "background" extinction. Mass extinction events, like the wiping out of dinosaurs 65m years ago, are impressive and dramatic, but account for only around 4% of now extinct species. The majority slip away quietly and without any fanfare. Over 99% of all the species that ever lived on Earth have already passed on, so what happened to the species that weren't annihilated during mass extinction events?

Charles Darwin proposed that evolution is controlled by "survival of the fittest". Current natural selection models imply that evolution is a slow and steady process, with continuous genetic mutations leading to new species that find a niche to live in, or die. But digging through the layers of rock, palaeontologists have found that evolution seems to go in fits and starts. Most species seem to have long stable periods followed by a burst of change: not the slow, steady process predicted by natural selection. Originally scientists attributed this jagged pattern to the imperfections of the fossil record. But in recent years more detailed studies have backed up the idea that evolution proceeds in fits and starts.

The quiet periods in the fossil record where evolution seems to stagnate are a big problem for natural selection: evolution can't just switch on and off. Over 20 years ago the late Stephen Jay Gould suggested internal genetic mechanisms could regulate these quiet evolutionary periods but until now no-one could explain how it would work.

Stindl argues that the protective caps on the end of chromosomes, called telomeres, provide the answer.



Human chromosomes, whose protective caps, or telomeres, may hold the key to why species become extinct Science Photo Library

Like plastic tips on the end of shoelaces, all eukaryotic species have telomeres on the end of their chromosomes to prevent instability. However, cells seem to struggle to copy telomeres properly when they divide, and very gradually the telomeres become shorter. Stindl's idea is that there is also a tiny loss of telomere length between each generation, mirroring the individual ageing process.

Once a telomere becomes critically short it causes diseases related to chromosomal instability, or limited tissue regeneration, such as cancer and immunodeficiency. "The shortening of telomeres between generations means that eventually the telomeres become critically short for a particular species, causing outbreaks of disease and finally a population crash," says Stindl. "It could explain the disappearance of

a seemingly successful species, like Neanderthal man, with no need for external factors such as climate change."

After a population crash there are likely to be isolated groups remaining. Stindl postulates that inbreeding within these groups could "reset" the species clock, elongating telomeres and potentially starting a new species. Studies on mice provide strong evidence to support this. "Established strains of lab mice have exceptionally long telomeres compared to those in wild mice, their ancestors," says Stindl. "Those strains of lab mice were inbred intensively from a small population."

Current estimates suggest telomeres shorten only a tiny amount between each generation, taking thousands of generations to erode to a critical level. Many species can remain stable for tens to hundreds of thousands of years, creating long flat periods in evolution, when nothing much seems to happen.

Telomere erosion is a compelling theory, helping to explain some of the more mysterious patterns in evolution and extinction. There are few data — partly because telomeres are tiny and difficult to measure — but new DNA sequencing techniques could soon change that. Studies have already shown a huge variation in telomere length between different species.

Other scientists are going to take some convincing. David Jablonski, a

palaeontologist from the University of Chicago, says: "The telomere hypothesis is interesting, but must be tested against factors like geographic extent, or population size and variability, that have already been proven effective in predicting extinction risk."

Stindl accepts that more experiments need to be done to test his ideas. "We need to compare average telomere lengths between endangered species and current successful species," he says. "I don't expect all endangered species to have short telomeres, since there are clearly other extinction mechanisms resulting from human threats to ecosystems, but I would expect some correlation between extinction risk and telomere length."

If Stindl is correct it will have interesting implications for mankind. Although inbreeding seems to have been the traditional way of lengthening telomeres, there could be a less drastic alternative. Stindl believes that it may be possible to elongate telomeres by increasing the activity of the enzyme telomerase in the embryo. So humans could perhaps boost biodiversity and save endangered species simply by elongating their telomeres. We may even be able to save ourselves when our own telomeres become critically short, making humans the first species to take hold of destiny and prevent their own extinction.

Indicators for human extinction

Human telomeres are already relatively short. Are we likely to become extinct soon?

1 Cancer Cancer incidence does seem to have increased, but it is hard to say whether this is due to longer lifespans, more pollution, or telomere erosion. The shortest telomere in humans occurs on the short arm of chromosome 17; most human cancers are affected by the loss of a tumour suppressor gene on this chromosome.

2 Immunodeficiency Symptoms of an impaired immune system (like those seen in the Aids patients or the elderly) are related to telomere

erosion through immune cells being unable to regenerate. Young people starting to suffer more from diseases caused by an impaired immune system might be a result of telomere shortening between generations.

3 Heart attacks and strokes Vascular disease could be caused by cells lining blood vessels being unable to replace themselves — a potential symptom of telomere erosion.

4 Sperm counts Reduction in male sperm count (the jury is still out on whether this is the case) may indicate severe telomere erosion, but other causes are possible. **KR**