C. BENNETT/AP

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Reign of terror: the aftermath of 11 September 2001 and subsequent anthrax attacks has seen a shift in the focus of US research as money is ploughed into combating the threat posed by bioterrorists.

which differing interpretations of skeletal anatomy generate noisy, sometimes acrimonious debate. In October, four researchers argued that Toumaï was in fact a female ancestral ape, related to modern gorillas[3]. The group included Martin Pickford and Brigitte Senut, both at the National Museum of Natural History in Paris, who reported in 2001 on the 6-million-year-old *Orrorin tugenensis* from Kenya[4] — a specimen whose status as a hominid is hotly debated.

Pickford, Senut and their colleagues pointed to features such as a flat plane at the back of Toumaï's skull where the neck muscles attached, taking this to indicate that the creature walked on all fours. But Brunet responded that this was a misinterpretation arising from deformation to the skull[5], and many experts agree. With the title of finder of the oldest hominid bones at stake, the 2003 meeting of the Paleoanthropology Society in Tempe, Arizona, promises to be a lively affair.

The next argument may revolve around the right to expand expeditions into the harsh and violent land where Toumaï was discovered. Previous experience elsewhere in Africa suggests the possibility of territorial scuffles between rival groups over field sites.

Brunet has said that his international team — the Franco–Chadian Palaeoanthropological Mission — is open to discussions about accepting new members. But only the toughest need apply. The region is subject to incursions of rebels and bandits from near the Libyan border, and scientific expeditions require troop escorts. But even armed guards can offer no protection against the sandstorms that regularly blast the bleak desert. ■

Rex Dalton

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Biodefence

Ploughshares into swords

A year ago, Rod Welch's research was well regarded but unlikely to grab the headlines. A microbiologist at the University of Wisconsin-Madison, he worked on toxins produced by the bacterium *Escherichia coli*.

Today, Welch is in the vanguard of the 'war on terrorism'. He plans to begin new studies of the deadly toxin made by *Clostridium botulinum*, a potential bioweapons agent, and has aligned himself with a group of researchers bidding for money to build a midwestern centre for biodefence research based at the University of Chicago. He also hopes to win research grants from the pot of some $1.75 billion that the National Institutes of Health (NIH) will award for biodefence in 2003. "There is a realization that the NIH expects people who have been trained in this area to come to bat," Welch says.

Welch is just one of thousands of US biologists who have begun recasting their work over the past year in response to the unprecedented funding opportunities for biodefence research. The bulk of the NIH's 2003 money — some $1.36 billion — is allocated to the National Institute of Allergy and Infectious Diseases (NIAID), headed by Tony Fauci. He hopes to spend $190 million on up to eight new regional and national biosafety labs, as well as four new regional centres of excellence.

Researchers also expect the increased funding to be a boon for work on the basic biology of infectious disease. The NIAID has already called for proposals in areas such as the sequencing of microbial genomes, the development of new animal models of emerging human diseases, and the innate immune system — the body's first line of nonspecific defence against infection. But Fauci warns that researchers must convince funders that their work will lead to new treatments, diagnostics and vaccines against bioweapons agents.

Although this initiative is already under way, there are potential roadblocks. One snag is that the NIH's paymasters in Congress have so far been unable to pass a budget for the agency, which is operating at flat funding until it receives its new appropriation. But lawmakers say that they are committed to providing the full increase for biodefence. A second unknown quantity is the new federal Department of Homeland Security, created in November. The department is supposed to work with the NIH to set priorities for biodefence research, but the details of this relationship remain unclear.

If these issues can be resolved, scientists say that new work in biodefence will pay off against a range of naturally emerging diseases — perhaps a more immediate threat than bioterrorism. This summer, the mosquito-borne West Nile virus spread across the central and western United States at breakneck speed, killing 215 people before the cool weather slowed its transmission. Officials at the Centers for Disease Control and Prevention in Atlanta, Georgia, say that improvements to the country's infectious-disease surveillance network made to counter the terrorist threat have already helped them respond better to West Nile cases this year than they had previously. Fauci is now looking to bench scientists similarly to prove their worth. ■

Erika Check