

# The weakest link

## Why the world needs Pakistan's dictator to survive



Argentina.....\$6.50	Canada.....C\$5.50	Guyana.....G\$750	Peru.....S/22.60
Barbados.....Bds\$10.90	Chile.....Ch\$3,000	Jamaica.....J\$190	UK.....£2.80
Bermuda.....Bds\$3.95	Colombia.....Col\$10,000	Mexico.....Mex\$45	USA.....US\$4.50
Brazil.....R\$10.00	Ecuador.....US\$5.00	Panama.....US\$5.75	Venezuela.....Bs3,750

Power napping

### Siesta time

**An hour's sleep in the middle of the day can work wonders**

FINALLY, vindication for power nappers. Far from being lazy louts, siesta-takers are actually doing their bit for the firm. According to Sara Mednick and her colleagues at Harvard, just 60 minutes of shut-eye in the middle of the day can make you perform like the fresh daisy you were first thing in the morning. But it has to be *bona fide* sleep; a mere rest, they found, has no effect.

Dr Mednick, whose results have just been published in *Nature Neuroscience*, wanted to know what effect power napping would have on people's visual perception. She asked 30 student volunteers to come into her laboratory. Four times on the same day, at 9am, noon, 4pm and 7pm, they were required to stare at a computer screen for an hour. Their task was to pick out a vertical or horizontal bar from a striped background—an established test of visual perceptiveness. The more quickly they picked out the bar, the more acute their perception.

All the volunteers had slept well in the days before the test, and had been warned off alcohol. During the test day, nicotine addicts were allowed to indulge their habits, but everyone had to remain uncaffeinated. Despite this cossetting, the performance of the ten volunteers who went straight through the day without a nap deteriorated rapidly. Their best scores were

Drug testing

### Cheers, mate!

**A smart beer mat may help to stop drug-facilitated rapes**

ON AN average evening, malicious spiking of drinks in Britain's bars and pubs is believed to lead to three "drug rapes". The prime suspect is flunitrazepam, a benzodiazepine known colloquially as "roofies" that packs a punch ten times greater than Valium. But other drugs, such as ketamines and GHB, are also used. The victims (some 12% of whom are male) become drowsy and weak-willed, and then black out, waking up with no memory of the event. SSD, a small biotechnology company based in Derby, is about to launch a kit to test for flunitrazepam and other drug-rape culprits in drinks. In a stroke of marketing genius, the company has put its test on the surface of a beer mat.

The test is an immunoassay. It involves antibodies on a surface reacting with the molecule being tested for, and so activating a dye. Several tests can be printed on a beer mat, so the same mat can be used to test several drinks or, alternatively, to test for several drugs. The firm has teamed up with a large beer mat maker. The first batch of this lab-on-a-mat will appear in pubs in June.

SSD launched a swizzle-stick version of the test last year, but the beer mat format has advantages. First, you don't need to remember to bring your kit with you to the pub. Second, beer mats are "real estate" for advertising, and SSD has found several sponsors keen to be associated with its test. This helps to offset increased production costs, which even for the simplest test more than double the 2p (3 cent) price of a normal beer mat.

The test is easy enough. A cautious drinker just dips a finger in the drink and touches one of the test areas on the mat. Positive and negative results produce different colours, so used test areas can be distinguished from fresh ones.

Trials reveal only one flaw in the test: shots of neat spirits can mask the drugs, although in such small volumes of drink, drugs typically leave telltale powder remains. Yet, as SSD's spokesman Jim Campbell points out, the biggest impact of the beer mat test may not be its chemical sensitivity, but rather its novelty and visibility. This will help raise awareness of drug rape—and avoid many a slip 'twixt cup and lip.

first thing in the morning, and it was downhill from there on. By the last session, they were taking 52% longer, on average, to identify the orientation of the bar than they had in the first.

However, another ten of the volunteers

were given the opportunity to nap at 2pm for 30 minutes, while the remaining ten were allowed a 60-minute snooze. The short nappers did not get any worse in their afternoon test sessions. The long nappers actually got better—they performed just as well as they had first thing.

To test whether a rest, rather than a nap, would do the trick, nine more volunteers were asked in. But to no avail: their abilities declined with each session. Nor did motivation seem to be a factor. Yet another set of volunteers, after a poor showing in the second session, was told they had not done very well, but that they could earn a further \$25 if they could do as well in the afternoon as they had that morning. The poor students' eyes lit up, according to Dr Mednick, but not one, alas, was able to stop the decay.

The upshot is another piece of evidence that humans, like many mammals which have evolved in tropical climes, are adapted not to go out in the mid-day sun. They are, rather, crepuscular—that is, they are most active in the morning and the evening. The protestant work-ethic that drives those now living in colder climates to work throughout the day may actually be counter-productive. At least, that is what you should tell your boss when asking for a couch to be installed in the office. ■



All in the cause of science