



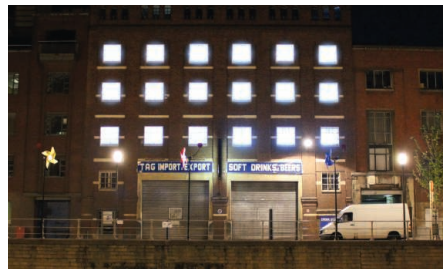
DOLPHIN SPRAY YIELDS DNA

Whalers used to shout, “Thar she blows!” when they spotted a whale’s spout. Soon scientists may be yelling the phrase.

The exhalations of surfacing whales and dolphins are so strong, “They release cellular material from their respiratory tracts,” says Céline Frère, an evolutionary biologist at the University of Queensland School of Veterinary Science in Brisbane, Australia. To see if she could extract DNA from the blow material, Frère and her team worked with captive dolphins (*Tursiops truncatus*) at the National Aquarium in Baltimore, Maryland, that had been taught to exhale on cue. The researchers collected the mucuslike spray by holding test tubes over the animals’ blowholes. The blow sample DNA matched DNA collected via biopsy darts, Frère’s team reported online 25 August in *PLoS ONE*. So the less invasive method can provide “good quality DNA,” she says. Biopsy darts typically penetrate 1 centimeter and then pop out, removing a sample of skin and blubber about 0.5 centimeters in diameter.

Because dolphins love to ride the bow waves of boats, researchers should be able to get close enough to catch blow samples in petri dishes, says Frère, who plans to test the technique on a wild population of dolphins in Australia later this year. But William Sherwin, a molecular ecologist at the University of New South Wales in Sydney, Australia, isn’t sure the method will work for all dolphins. The discovery is “extremely exciting because it is time consuming and more invasive to get biopsy samples,” he says. But some dolphins “are very good at staying just out of reach.”

C. Scott Baker, a conservation geneticist at Oregon State University, Newport, adds that “the technique could be useful for sampling young dolphins, since there is often concern about collecting biopsies from calves that are still accompanied by their mothers.”



Pulse of the City

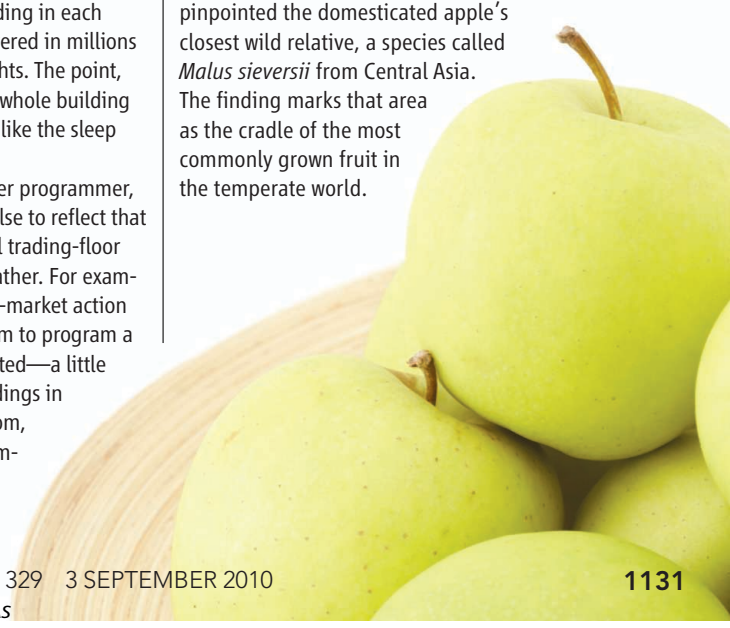
It’s hard to look at a computer circuit board and not see a city. But City Sleep Light, a new project by Paris-based artist Antoine Schmitt, asks viewers to make the reverse association.

On select dates between 27 August and 2 October, when night falls in Brussels, Berlin, Madrid, Linz, and Helsinki, a building in each city will glow to life. Some are covered in millions of LEDs, others bathed in floodlights. The point, Schmitt says, is to “transform the whole building into a single light that pulses just like the sleep light of a laptop computer.”

Schmitt, who is also a computer programmer, says he composes each night’s pulse to reflect that day’s *zeitgeist*, drawing from local trading-floor activity, traffic, pollution, and weather. For example, he says, a day of listless stock-market action and hectic traffic might inspire him to program a pulse that is “pessimistic and excited—a little chaotic.” If you can’t see the buildings in person, visit www.citysleeplight.com, where you can make your own computer screen light up to the pulse of the city of your choice.

Chock-Full of Genes

Next time you crunch down on a crisp apple, consider this: Each cell in each bite is packed with 57,000 nuclear genes—more than double the number in a human or cucumber genome, and the highest total gene count to date for any plant. That’s because, about 40 million years ago, the genome of the apple’s ancestor underwent a duplication. That’s common enough, but more unusually, the apple never lost its extra copies over the years, says Riccardo Velasco of the Istituto Agrario San Michele all’Adige Research and Innovation Centre in Trento, Italy. Velasco and 84 collaborators published the Golden Delicious apple genome online 29 August in *Nature Genetics*. The team also pinpointed the domesticated apple’s closest wild relative, a species called *Malus sieversii* from Central Asia. The finding marks that area as the cradle of the most commonly grown fruit in the temperate world.



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Outnumbered

Attendees of the International Congress of Mathematicians (ICM), held in Hyderabad in southern India last week, were in for a rare intellectual treat: the chance to match wits with reigning World Chess Champion Viswanathan Anand. On 24 August, Anand took on 40 math-savvy opponents from 11 different countries simultaneously. He beat 39 of them, but the last 10 players held on tenaciously, said Anand.

“It was ... a roller-coaster ride,” he said. “I was completely busted.”

Just one player, 14-year-old budding mathematician Srikar Varadaraj of Bangalore, eked out a draw, highlighting something Anand said he and his mathematician opponents have in common: an interest that starts at a young age and lasts a lifetime. “If kids get fascinated in mathematics early, it stays for [a] long [time]—just like in chess.”

