

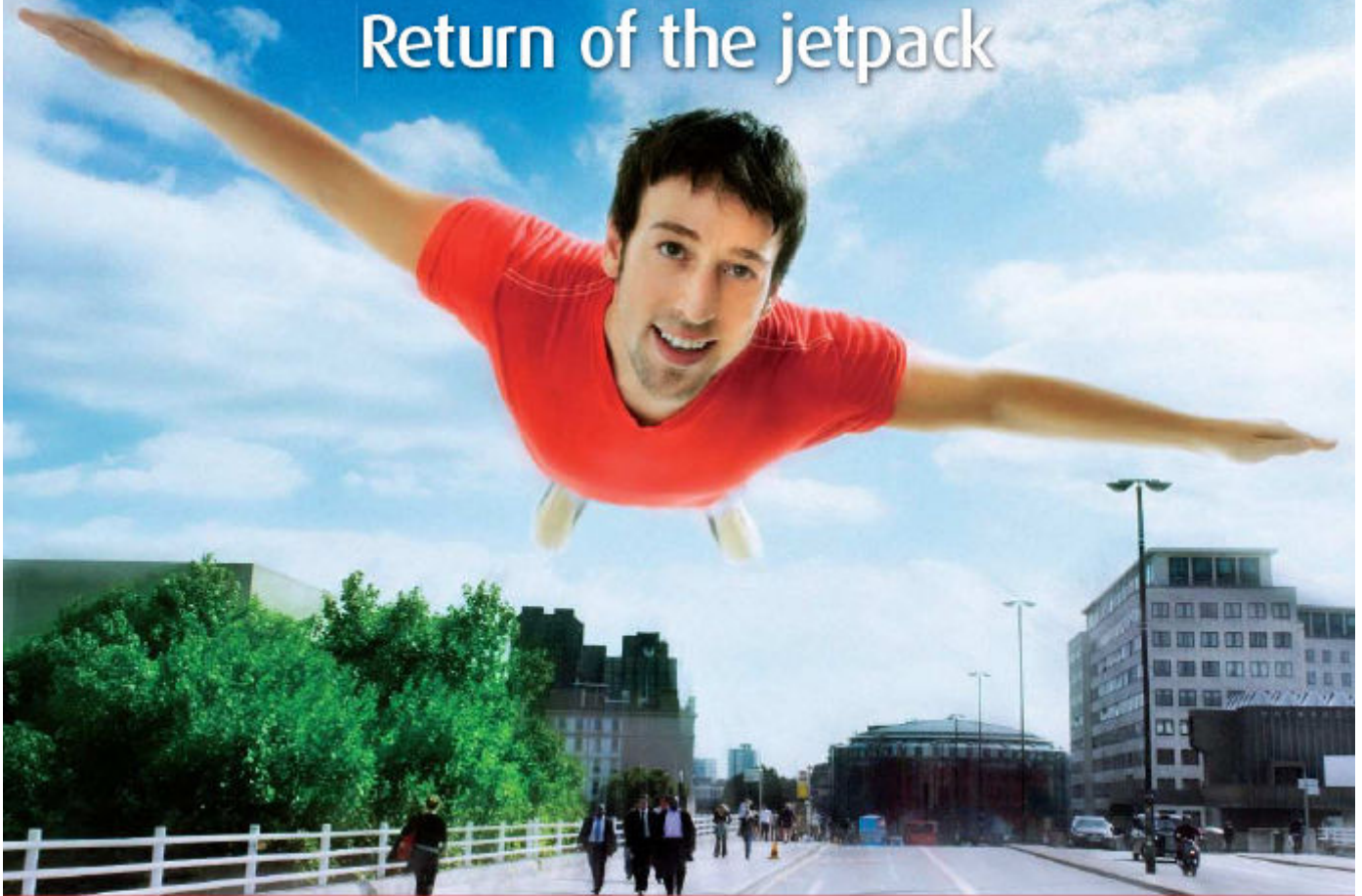
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NewScientist

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Weed gains power to muster army of insect bodyguards

A COMMON weed has been given the ability to summon an army of bodyguards to fend off attacks by leaf-munching spider mites. Researchers equipped *Arabidopsis thaliana* with a gene from strawberries that synthesises scented chemicals called terpenoids. These attract a species of predatory mite that eats spider mites.

The ultimate aim is to incorporate this gene into crop plants, either by conventional breeding or by genetic engineering, to give them similar protection. "If crops could attract natural bodyguards against insects, farmers could apply less pesticide," says Harro Bouwmeester of Wageningen University in the Netherlands, head of the Dutch-Israeli team that engineered the weeds.

Bouwmeester and his colleagues directed the gene into the plant's mitochondria, where the main precursor to terpenoids is found. The gene codes for an enzyme that catalyses the production of the terpenoids nerolidol and dimethyl nonatriene. The latter has never been seen before in *Arabidopsis*.

Plants that exuded these scents after being given the strawberry gene became more attractive to the predatory mite *Phytoseiulus persimilis*, the team reports in *Science* (vol 309, p 2070).

The researchers now hope to extend their work to cucumbers.



ESTHER BERKOWITZ / GETTY IMAGES

Sea's eerie glow seen from space

THE ancient mariners were right. Tales of "milky seas" that glow bluish-white at night and extend as far as the horizon have been spun by sailors for centuries. Now this eerie glow has been spotted from space.

Steve Miller of the US Naval Research Laboratory in Monterey, California, found this strange phenomenon in a trawl through archives of satellite cloud-cover data. Though the effect has been reported more than 200 times since 1915, he could find only one

account that documented the precise time and location of an observation – in the north-western Indian Ocean in 1995. "I didn't really expect to see anything in the corresponding satellite data, because the light is so weak," says Miller. "But serendipity intervened, and I found a possible match within 30 minutes."

When Miller and his colleagues amplified the signal, a bright structure that followed the sea surface currents popped out. The

structure spanned 15,400 square kilometres – an area the size of Connecticut, and far larger than previously estimated by sailors. What's more, it lasted for three consecutive nights (*Proceedings of the National Academy of Sciences*, DOI: 10.1073/pnas.0507253102).

Although no one fully understands what causes this nocturnal white blanket, the favourite theory is that bioluminescence from bacteria associated with micro-algae might be responsible. From the size of area covered, Miller calculates that 4×10^{22} bacteria would be needed to produce the light.

How to avoid sex with your ex

SEX with your ex can often be a mistake. So too, it seems, for female crickets, who may actually mark conquests with their scent just to avoid mating with them again.

Female crickets (*Gryllodes sigillatus*) typically mate with at least two different males every night. Tracie Ivy and colleagues at Illinois State University in Normal noticed that females preferred novel males to familiar partners and guessed that the females were recognising a chemical scent. To test whether the males or females were producing the marker, they created a series of inbred families in which siblings would look and sound slightly different, but would carry identical chemical signals.

The females were quite happy to mate first with one male and then with his brother, who should smell the same, ruling out the possibility that the vital chemical signal was coming from the males (*Proceedings of the Royal Society B*, DOI: 10.1098/rspb.2005.3222).

By contrast, females shunned males that had recently mated with their sisters, though they had never encountered them before. "Females mistook their sisters' markers as their own and thought 'hey I've been there, I should avoid him'," says Ivy.



LEON MARSH/REUTERS

A rest in time keeps the voice sublime

CLASSICAL singers know they need to rest their voices after a performance, to avoid overstraining the larynx. Now measurement of the vibration of singers' larynxes has shown that the vulnerable period may last much longer than most performers realise – possibly for as long as three days after the event.

But there is good news too. By resting their voices for two days before a heavy gig, singers can ease post-performance strain and hasten recovery before the next big challenge.

Thomas Carroll and his colleagues at the University of Colorado Health Sciences Center in Denver attached a vibration sensor to the breastbones of

four opera and three choral singers to measure the work done by the larynx during rehearsals and performances. The sensors, which were in place for two weeks, fed a stream of vibration measurements to a small computer the artists carried on their belts.

Carroll found that the larynx's workload as measured by the sensors tallied with the singers' subjective reports of discomfort after the performance. He hopes that similar sensors might eventually allow singers and their coaches to monitor the voicebox and spot potential problems early enough to avoid overstrain.

He presented his team's findings at the annual meeting of the American Academy of Otolaryngology's Head and Neck Surgery Foundation in Los Angeles this week.