

# *Existential Animal News and the World's Lightest Solid*

By DOUGLAS QUENQUA APRIL 1, 2013



In Indiana, a dairy farm is turning cow manure into fuel for its delivery fleet and milking equipment.  
Peter Hoffman for The New York Times

It was an up-and-down week for animals. On the plus side, cows are driving trucks and termites are making sand art. But we start here with [bees](#), which have seen better days.

**Biogen Exhibit 2006  
Mylan v. Biogen  
IPR2018-01403**

## AGRICULTURE

### **Honeybees in Retreat**

Honeybees have been dying en masse since about 2005, and now the malady responsible — colony collapse disorder — [appears to be advancing](#). Last year, 40 to 50 percent of the hives needed to pollinate fruit and vegetables in the United States were lost, commercial beekeepers say.

Exactly what causes colony collapse disorder is unclear, but beekeepers point to a new class of pesticides, [neonicotinoids](#), which are incorporated into the plants themselves. Pesticide manufacturers say the product is safe, but that they are open to further study.

The issue is far from abstract. A quarter of the American diet depends on bee pollination, according to the Department of Agriculture, so fewer bees lead to smaller harvests and higher [food prices](#). (Almond prices are a bellwether, as is the price of bee rental, which now runs about \$200 per hive, a 20 percent increase.)

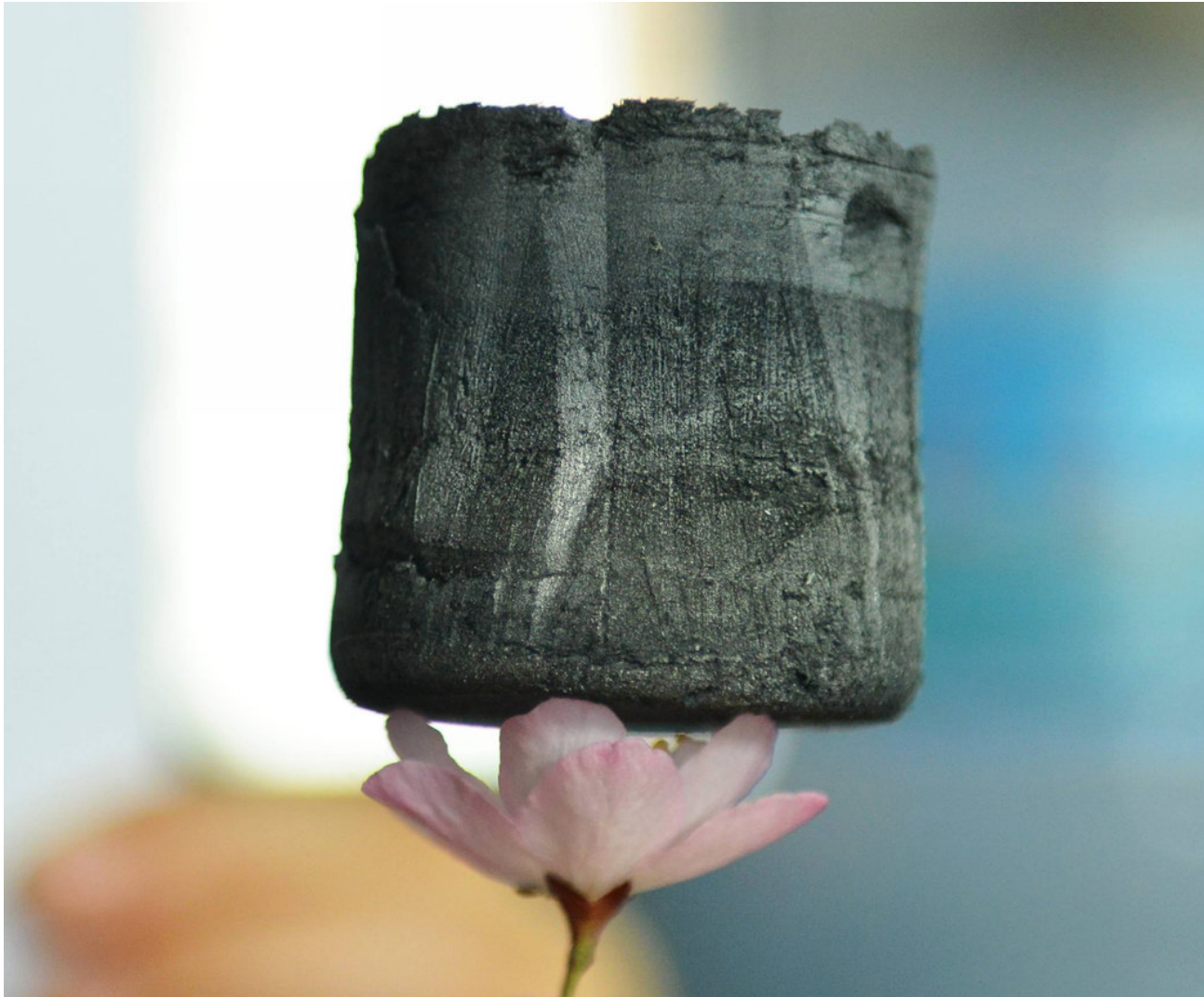
The Agriculture Department says it will issue its own assessment next month.

## SUSTAINABILITY

### **Cow Power**

A [dairy farm](#) in Fair Oaks, Ind., has struck a blow for renewable energy by turning its endless supply of cow manure into fuel for its delivery trucks, powering 42 tractor-trailers that make daily runs to and from Tennessee. A \$12 million “digester” at the farm processes the manure into a fuel that is used to run everything from milking equipment to a farm gift shop.

The Department of Energy hailed Fair Oaks Farm as a pacesetter for the industry, though as Erin Fitzgerald, a senior vice president at the [Innovation Center for U.S. Dairy](#), acknowledged, “It’s not glamorous; it doesn’t really catch your eye like wind and solar.”



What is now the world's lightest material, called carbon aerogel, sitting atop a cherry flower.  
Shan he/Imaginechina, via Associated Press

## ENTOMOLOGY

### **Fairies? Maybe Termites**

Termites emerged as the likely makers of “fairy circles,” the barren red spots that dot a narrow strip of desert from Angola to Namibia to South Africa. By feasting on grass roots beneath the surface, the termites keep the circles — which range from 6 to 40 feet in diameter — free of vegetation and better able to absorb rainwater. At least that is the conclusion that Norbert Juergens, a professor of ecology at the University of Hamburg, [proposed in the journal Science](#).

But Walter R. Tschinkel, a biologist from Florida State University who last year published [an extensive examination of the fairy circles](#), said the cause was still a mystery, adding that Dr. Juergens “has made the common scientific error of confusing correlation (even very strong correlation) with causation.”

The local Himba people assert that the circles, which they call “footprints of the gods,” were made by their ancestor Mukuru, and neither scientist is likely to convince them otherwise.

## HEALTH

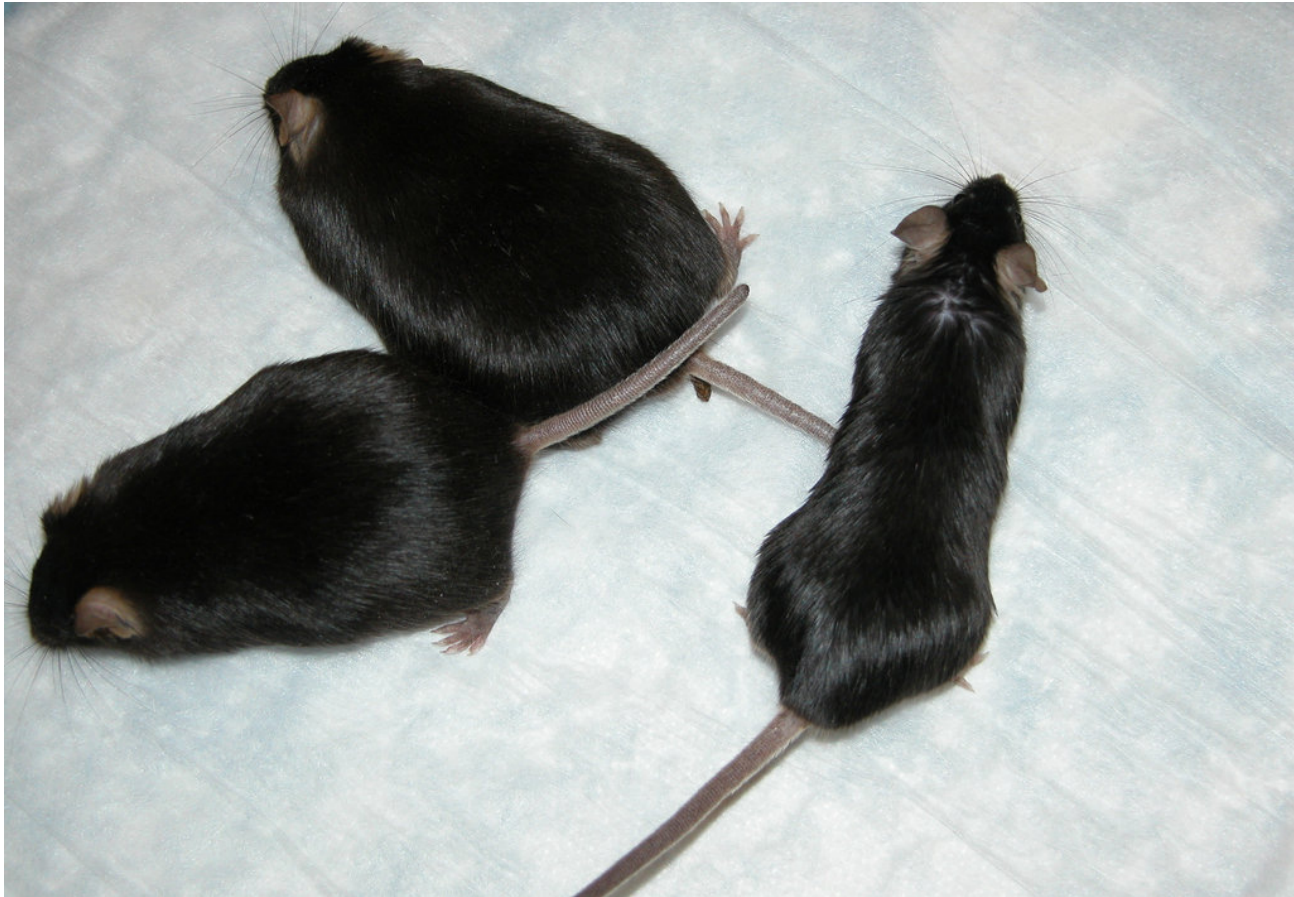
### **Microbes and Weight Loss**

Does weight loss require the right mix of diet and exercise, or just the right mix of bacteria inside your gut?

[A pair of studies released last week](#) suggests that bacterial makeup in the intestines has a lot to say about whether a person gains or loses weight. Mice that received gastric bypass surgery lost weight after seeing significant changes to their gut microbiota, according to a study published in *Science Translational Medicine*. A second study, published in *The Journal of Clinical Endocrinology and Metabolism*, found that overweight people may be more likely to harbor a certain type of intestinal microbe that could contribute to weight gain.

If borne out, the research could lead to noninvasive weight-loss alternatives for obese patients who either do not want or do not qualify for gastric bypass surgery, doctors said. Previous studies have shown that the intestinal microbes of an obese person change significantly after a gastric bypass, becoming more like those of a skinny person.





DRUGS

### **New Treatment for M.S.**

It started life as an antimold treatment for sofas, but dimethyl fumarate [was approved by the Federal Drug Administration](#) last week as a treatment for multiple sclerosis.

The drug, which will be sold by Biogen Idec under the brand name Tecfidera, is expected to be a blockbuster. It is only the third oral treatment to be approved for the disease, and it offers a tantalizing combination of efficacy and safety, doctors and Wall Street analysts say. Some patients are said to have been delaying treatment until Tecfidera is available.

M.S. affects about 400,000 Americans and more than 2 million people worldwide. Drugs are typically judged by their ability to prevent relapse; Tecfidera cut the relapse rate 44 percent in one trial and 53 percent in another, which ranks above most injectable treatments and at the top end of

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