

## Great Moments In Entomology

Ever since 1998, the year the water-beetle journal *Latissimus* published a landmark paper entitled “Another case of water beetles landing on a red car roof,” entomologists have sought to understand why aquatic insects tend to lay their eggs on dark-colored vehicles.

Now a Hungarian team explains why. Biophysicist Gábor Horváth and colleagues of Eötvös Loránd University in Budapest laid out red, black, yellow, and white plastic sheets by a marsh one sunny summer day. Over the course of 3 hours, 1229 aquatic insects landed on the sheets: 700 on the red and 398 on the black, but only 88 on the yellow and 43 on the white. The scientists then measured reflection and polarization patterns from four automobiles in the same colors.

The secret? Aquatic insects detect water based on the horizontal polarization of reflected light. Light from the red and black cars was highly and horizontally polarized, so from a bug’s point of view, the darker surfaces look like water, the team concludes in the 7 July issue of *Proceedings of the Royal Society B*.

“We propose that visitors to wetland habitats drive light-colored cars to avoid egg loss by confused water insects,” the team wryly advises.

That makes sense to insect expert Mark Hostetler of the University of Florida, Gainesville, who also agrees that dirty, less reflective cars would pose less peril to bugs.



When the 5200-year-old “Iceman,” a.k.a. Ötzi, was discovered in the Tyrolean Alps in 1991, the frozen body was in pretty bad shape. But a new study finds that in life, Ötzi was probably very well built and highly active.

Ötzi was only about 158 centimeters tall, but a team led by anthropologist Christopher Ruff of Johns Hopkins University in Baltimore, Maryland, estimates from computed tomography scans of his pelvis and thighbones that he weighed about 61 kilograms and was stocky like a wrestler. The scientists also compared Ötzi with 139 European skeletons, ranging from about 30,000 to 3500 years old. Reflecting decreasing mobility as people transitioned from hunting and gathering to farming, the strength of the femurs and tibia, estimated from the distribution of the bone cortex, declined in the more recent skeletons.

The Iceman’s thighbones were average for his period, but his shins were exceptional, the scientists found. The tibia show a pattern of strengthening in the front and back, a sign of high mobility over rough terrain because of stress on the bone from constantly bending the leg. That’s consistent with suggestions that he shepherded animals between Alpine valleys and mountains, the team concludes in the July issue of the *Journal of Human Evolution*.

“This important biomechanical analysis provides compelling evidence that Ötzi was muscular, had large and robust bones, and was well adapted to living in tough, mountainous settings,” says anthropologist Clark Larsen of Ohio State University in Columbus.

## THE ICEMAN COMETH AND GOETH



## Eyes Reveal Our Paleo-Brain in Action

If people feel they are being watched, they are likely to behave themselves—even if the observer is a paper copy of a pair of eyes. Behavioral biologist Melissa Bateson of the University of Newcastle upon Tyne in the U.K. is in charge of her psychology department’s coffee-and-tea fund. Tired of colleagues failing to make the requested donation each time they filled up, she wondered whether the sense of being observed would make them shape up. Evolutionary theory says it’s in our own interests to “behave nicely when we’re being watched,” she says. Research also indicates that people will respond to eyelike spots on a computer screen.

So, each week for 10 weeks, Bateson and her co-workers posted a different picture—of either eyes or flowers—near donation instructions. Milk use was tracked as an indicator of overall tea and coffee consumption. On average, drinkers put almost three times as much into the kitty during the “eyes” weeks, with some variation: A judgmental male gaze, for example, elicited more donations than a flirtatious female sideward glance, they report online 28 June in *Biology Letters*. “The size of the effect was really quite striking,” says Bateson. She suggests using eyes on security signs instead of pictures of closed-circuit cameras.

“It’s a great piece of work,” says anthropologist Daniel Fessler of the University of California, Los Angeles, who has showed that fake eyes prompt people to be generous in lab games. “This shows that the same thing happens in the real world.”



## CHOCOLATE POWER

The news last week that Cadbury, the U.K.’s leading chocolate manufacturer, is sending 250 tons of chocolate to the landfill due to salmonella contamination has caused dismay among chocoholics and scientists alike. “The volume is shocking: equivalent to 33 double-decker buses,” says Gavin Harper, an environment and architecture student at the University of East London, U.K.

In a paper he’ll present next week at a “sustainable science” symposium in Wales, Harper has calculated that if the chocolate were burned for energy, it could provide 5500 gigajoules (1,530,000 kilowatt-hours)—enough to power a town of 90,000 people for a week. “Chocolate is biomass,” says Gaynor Hartnell of the Renewable Energy Association in London. “It is also very calorific, so burning seems a sensible idea.”