

## Telltale Stripes

Devotees of DNA bar-coding, a method of differentiating species using short, standard DNA sequences, hope to speed the description of new kinds of organisms and make it easier for nontaxonomists to identify tricky specimens such as this tachinid fly (*Adejeania vexatrix*; left).

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WATCH

Keeping track of the latest developments in the field is Mark Stoeckle, a physician who teaches in the Program for the Human Environment at Rockefeller University in New York City. Last March, Stoeckle launched the Barcode of Life Blog, which provides weekly news updates, analyses of papers, and other information. Recent posts, for example, discuss the technique's success in distinguishing hard-to-separate species of red algae and why the mitochondrial DNA sequences often used as bar codes differ more between species than within them.

>> [phe.rockefeller.edu/barcode/blog](http://phe.rockefeller.edu/barcode/blog)



## Outwitting the Grim Reaper

The bigger your brain is relative to your body, the smarter you are, increasing your chances of staying alive in a dangerous world. That's the idea explaining the evolution of brain size, and it's indirectly supported by evidence that big-brained animals are better problem solvers and socially more complex. But there are few data directly connecting bigger brains with survival.

Now, evolutionary biologist Daniel Sol of the Autonomous University of Barcelona in Spain and colleagues in the United Kingdom, Hungary, and Canada have used birds to fill in this gap. The team analyzed mortality rates in 300 natural populations of 220 species in environments from tropical to polar regions. They found that relative to body size, birds with larger brains, such as parrots and crows, live longer than do smaller-brained species such as grouses or pigeons. The average tropical parrot, for example, has a 6% to 12% chance of dying in any given year, whereas the odds of survival for a mourning dove are less than 50–50.

The correlation remained significant even after accounting for other factors such as

migration casualties and the life-shortening effects of caring for young, the scientists reported online on 4 January in the *Proceedings of the Royal Society B*. Evolutionary psychologist Robert Deaner of Grand Valley State University in Allendale, Michigan, says the findings are not unexpected, but they supply the “first real evidence” for the idea that “large-brained species have a low probability of dying” within a given period.

## Let's Brainstorm

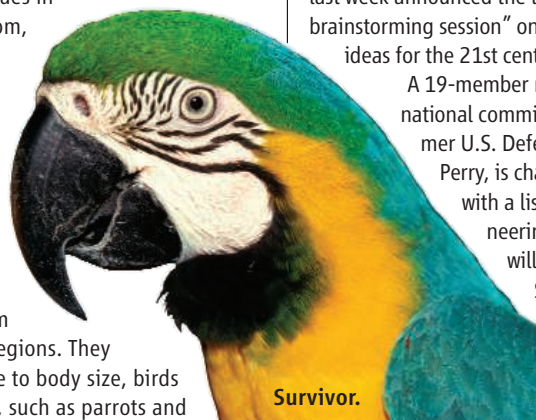
The U.S. National Academy of Engineering (NAE) last week announced the launch of a “worldwide brainstorming session” on great engineering ideas for the 21st century.

A 19-member multidisciplinary international committee, headed by former U.S. Defense Secretary William Perry, is charged with coming up with a list of about 20 engineering challenges, which will be announced in September.

The public is invited to chime in at [www.engineeringchallenges.org](http://www.engineeringchallenges.org), where engineer and

former President Jimmy Carter has a lead-off essay on his favorite challenge, “the growing chasm between the rich and poor.”

NAE spokesperson Randy Atkins says this exercise is a natural follow-up to NAE's list of “greatest engineering achievements of the 20th century.”



Survivor.



Scientist surveys wall of detached ice shelf.

## ARCTIC BREAKUP

Canada used to have six ice shelves; now it only has five, after the astonishingly rapid and total collapse of the Ayles shelf off Ellesmere Island near northern Greenland. The Canadian Ice Service noted the breakup on satellite images shortly after it occurred on 13 August 2005, but it got no public notice until last week.

In a striking example of fallout from climate change, 87.1 square kilometers of ice calved off in less than an hour, according to a team led by University of Ottawa glaciologist Luke Copland. In a paper now under review at *Geophysical Research Letters*, the scientists say a long crack appeared in the 4500-year-old shelf when pack ice normally pinning it in place melted away. The shelf ice moved rapidly offshore in several pieces, causing the disappearance of a rare freshwater lake ecosystem that had been dammed behind it.

Ice shelves “are endangered landscape features,” says Warwick Vincent, a polar scientist at Laval University in Quebec. Ellesmere's have shrunk 90% since 1900, and summer ice cover on its lakes has thinned by nearly two-thirds since the 1990s. The largest chunk of Ayles ice shelf—now Ayles ice island—is now frozen into sea ice about 50 kilometers from its origin. But this winter, normally solid ice has been fractured by high winds and temperatures 7°C above normal. If the island breaks loose, Copland says, it could gyre on currents into the lower-Arctic Beaufort Sea, where it may menace ships and oil rigs.