In this roundup, Elsa Youngsteadt summarizes some notable recent items about scientific research, selected from news reports compiled in Sigma Xi's free electronic newsletters Science in the News Daily *and* Science in the News Weekly. *Online: http://sitn.sigmaxi.org and http://www.americanscientist.org/sitnweekly*

Bat Beacons

This cluster of *Marcgravia evenia* blooms may be dull in color. But acoustically, it's dazzling. The curved, dish-shaped leaf above the flowers creates unusual echoes

that attract bats to pollinate the plant. Most leaves reflect sounds that hit them straight on, but the *M. evenia* leaf loudly echoes sounds from a wide range of angles. For a moving bat navigating with sonar, the *M. evenia* echo stays the same while those of other leaves quickly come and go. This acoustic beacon helps the animals find the flowers faster. In the lab, researchers hid nectar feeders in a jumble of artificial foliage. When the feeder was topped with a replica dish-shaped leaf, bats *(Glossophaga soricina)* found it nearly twice as quickly as when it bore a replica of an ordinary leaf. (Image courtesy of Ralph Mangelsdorff and Ralph Simon.)

Simon, R., et al. Floral acoustics: Conspicuous echoes of a dish-shaped leaf attract bat pollinators. Science *333:631–633 (July 29)*

Spoiler Alert

Movie critics might do their readers a favor by slipping more plot spoilers into their reviews. Far from wrecking a story, revealing a surprise ending makes fiction more enjoyable. Psychologists picked a dozen short stories—including mysteries and tales with clever plot twists—and wrote a spoiler for each. At least 30 people read the original version of each story alone, while another 30 read the spoiler first. Those who knew a story's ending consistently ranked it as more pleasureable than did naive readers. The authors speculate that people who already knew the endings felt less anxious and enjoyed anticipating events in the story. So go ahead, peek at the end of the novel!

Leavitt, J., and N. Christenfeld. Story spoilers don't spoil stories. Psychological Science *(published online August 12)*

Ancient Harvestmen

To human eyes, Carboniferous forests—with their tree ferns and giant insects—would have looked distinctly weird. One group of inhabitants, though, has hardly changed: the harvestmen. These delicate, spiderlike arthropods are generally not well preserved as fossils. But an analysis of two 305-million-year-old relics has revealed the ancient creatures in detail. The fossils were obscured inside mineral nodules, so researchers x-rayed them thousands of times and compiled the images into virtual 3D models—which turned out to be strikingly similar to today's harvestmen. One of the fossilized species (*Macrogyion cronus,* white in the drawing below) would have scrambled through foliage with its prehensile legs, while *Ameticos scolos* (black) probably lived among moist, woody debris. Harvestmen are among the first arthropods to have taken on the modern body plans we recognize today. (Image courtesy of Jason Dunlop.)

Garwood, R. J., et al. Anatomically modern Carboniferous harvestmen demonstrate early cladogenesis and stasis in Opiliones. Nature Communications *2:444 (August 23)*

Genome Training

Poplar *(Populus)* trees readily clone themselves through asexual reproduction. But their identical genomes aren't the end of the story. Researchers gathered cuttings from poplar clones that had lived in different parts of Canada for 25 to 100 years and raised them together in the same growth chamber. Even though their DNA sequences were the same, plants from distant regions responded differently to an experimental drought. The researchers attribute this variation to epigenetic changes. The clones had different numbers of methyl groups (chemical tags that alter gene expression) linked to their DNA. The longer the clones had lived apart, the more divergent their methylation patterns—a phenomenon that scientists have also observed in aging human twins.

Raj, S., et al. Clone history shapes Populus *drought responses.* Proceedings of the National Academy of Sciences of the U.S.A. *(published online July 11)*

Found: Missing Oxygen

Although oxygen is the third most common element in the universe, astronomers have had trouble locating it in its expected abundance. Vexingly, its molecular form (O_2) has never even turned up outside Earth's atmosphere—until now. In the Orion Nebula, pictured above, the Herschel Space Observatory detected three peaks of infrared emission that match those of molecular oxygen. The signal emanated from a relatively warm star-forming region with a temperature of about –180 degrees Celsius. The authors of the study think that warmth may cause water ice to evaporate from dust particles; the gaseous water would then undergo reactions that yield molecular oxygen. The authors plan to continue searching relatively warm regions of space for more of the missing molecules. (Image courtesy of NASA and ESA.)

Goldsmith, P. F., et al. Herschel measurements of molecular oxygen in Orion. The Astrophysical Journal *737:96–112 (August 20)*