

"WEE SLEEKIT BEASTIE"

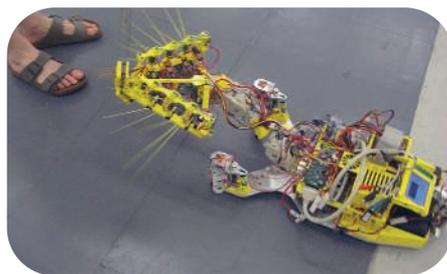
To celebrate the International Year of Astronomy, children in eight Scottish schools vied to create new constellations out of eight stars they are studying. The winning entry, a mouse by 11-year-old Laura Doliczny of Edinburgh, overlaps six official constellations, including Orion, Cepheus, and Taurus. Aldebaran is at the base of the tail; Mu Cephei is the eye.

Robot Rat "Sees" With Whiskers

Most robots view the world with camera eyes. Now researchers at the University of Sheffield and the Bristol Robotics Laboratory in the United Kingdom have built a ratlike robot that feels its way with quivering whiskers.

With its ability to gauge the textures and shapes of objects, the "SCRATCHbot" (Spatial Cognition and Representation Through active touCH) could help explore areas where normal

networks behind whisker control, observes whisker robotics expert Anil Seth of the University of Sussex in the United Kingdom.



robots can't see clearly, such as dark or dusty environments or even underwater, says robot builder Tony Prescott, a computational neuroscientist.

In real rats, the whiskers sweep back and forth about 20 times a second, bending when they touch something. Receptors in the whisker follicles then send messages to the brain. The robot's whiskers vibrate up to six times per second, feeding sensory information back to a computer-simulated rat brain. Older "rat" robots could move sensors back and forth, but SCRATCHbot can move its whiskers in many different planes and spread or bunch them to explore different areas, says Prescott. This helps provide a more realistic model of the neural

The technology could be used to help locate fire survivors in a smoky building or, less glamorously, to assess the texture of carpets or floors as part of a robot vacuum cleaner, says Prescott. He's now working on smartening up his rat with a simulated hippocampus—a brain area that can memorize maps of an environment.

Obamology

Hey, they never did this with George W. Bush! The American Sociological Association, meeting in San Francisco, California, in August, will be examining the presidency in-depth in sessions held under the heading "The Sociological Significance of President Barack Obama."

- Plenary Session: "Why Obama Won (and What that Says About Democracy and Change in America)"
- Presidential Panel: "A Defining Moment? Youth, Power and the Obama Phenomenon"
- Presidential Panel: "Through the Lens of Gender, Race, Sexuality and Class: The Obama Family and the American Dream"
- Thematic Session: "Understanding Democratic Renewal: The Movement to Elect Barack Obama"
- Thematic Session: "The Future of Community Organizing During an Obama Presidency"
- Thematic Session: "Asian-American Movements, Identities, and Politics: A New Racial Project in the Obama Years?"
- Open Forum: "Does the Obama Administration Need a Social Science Scholars Council?"

Into the Mouth of the Hadrosaur

A dental exam has supplied evidence that *Edmontosaurus*—one of the most common dinosaurs of the late Cretaceous, some 67 million years ago—chewed unlike any animal alive today.

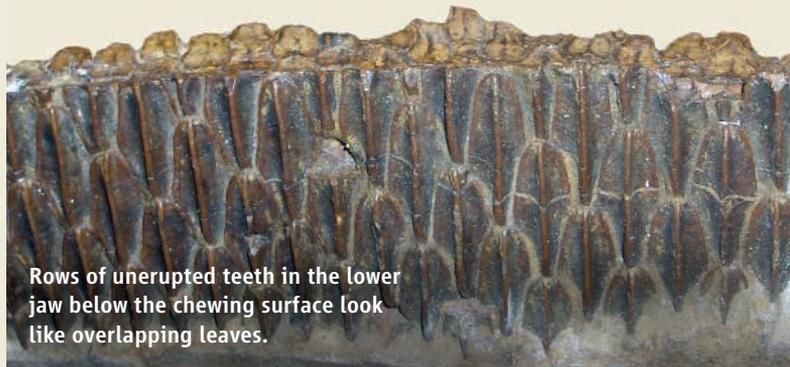
Edmontosaurus belonged to a group of plant-eating dinosaurs called ornithomorphs. In 1984, researchers studying the sutures between bones in fossil skulls concluded that ornithomorphs had flexible upper jaws. When the lower jaw clamped shut, they said, the pressure would spread outward from both sides of the upper jaw. The upper rows of teeth would then grind against the lower teeth, rather than slicing as they do in other dinosaurs.

Now three paleontologists have acquired the strongest independent evidence yet for this unique jaw motion. Vincent Williams of the University of Leicester in the United Kingdom and colleagues examined microscopic wear patterns on 13 teeth from a 13-meter-long *Edmontosaurus* found in Wyoming. The dinosaur and its close kin, known as hadrosaurs, had as many as 1000 teeth in multiple rows that moved forward as functional teeth were worn down, says Leicester co-author Mark Purnell.

Patterns of tiny scratches on the teeth revealed that the jaws moved just as had been predicted, the team reported

last week in the *Proceedings of the National Academy of Sciences*. "They would have been able to process very tough vegetation," such as horsetails, says co-author Paul Barrett of the Natural History Museum in London.

Paleontologist Lawrence Witmer of Ohio University College of Osteopathic Medicine in Athens calls the study "one of the best microwear papers I've seen." But he still isn't convinced that the upper jaw could flex.



Rows of unerupted teeth in the lower jaw below the chewing surface look like overlapping leaves.