



Azy at the Great Ape Trust uses a touchscreen.

## can u turn on ur cam pls?

Webcams may be the hottest new thing in great ape culture. Orangutans from three continents could soon be communicating virtually and may even be able to present each other with bananas at the push of a button.

The idea came from Dutch conservationist Willie Smits, who runs an orangutan shelter and rehabilitation center in Borneo, Indonesia. Touchscreens will soon allow its residents to see and hear counterparts in Apenheul Primate Park in Apeldoorn, the Netherlands; later, the three orangutans at the Great Ape Trust of Iowa in Des Moines may go online as well.

The idea of Webcamming apes isn't far-fetched, says Josep Call of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, because the animals can understand video and learn to use computers. The main goal is to catch the public's imagination and make them aware of the grave threats—primarily deforestation—to orangutans' future, says Apenheul spokesperson Anouk Ballot. But getting hooked up will also "be a lot of fun" for the animals. It may offer research opportunities as well, says Rob Shumaker of the Great Ape Trust, who already uses touchscreens in studies of orangutans' ability to use symbols and syntax.

## Mussel Power

When it comes to adhering to a surface, wet or dry, nothing beats a mussel. A new study sheds light on the bivalves' sticky secret.

An amino acid called DOPA is believed responsible for the remarkable qualities of mussel glue, which attaches the mollusks to surfaces via tough strings called byssal threads.

To test whether DOPA can bond with metal or body tissue, Phil Messersmith, a biomedical engineer at Northwestern University in Evanston, Illinois, and colleagues tethered a single DOPA molecule to the tip of an atomic force microscope. They then touched the tip to a titanium dioxide surface and measured the force needed to pull the DOPA off the surface. It took 800 piconewtons to do the trick—almost 4 times the force needed to break the strongest known protein link. When bonding to an organic surface, DOPA goes a step further, forming covalent bonds—the sharing of electrons between atoms—the researchers reported online last week in the *Proceedings of the National Academy of Sciences*. But unlike covalent bonds, the DOPA bond can re-form if the attachment is broken.

Herbert Waite, a marine biochemist at the University of California at Santa Barbara, says the study indicates that mussels can stick to virtually any surface. That property should be useful for biomedical devices, says Messersmith, who is testing whether DOPA can affix a nonstick polymer coating onto implants to prevent buildup of materials from blood.



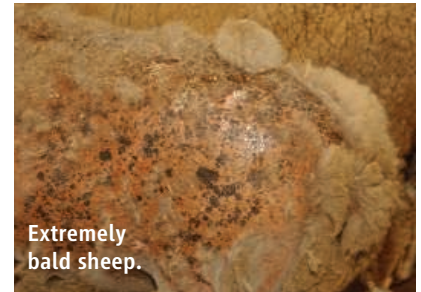
Mussels stick via hundreds of tough threads.

## LOOKING FOR UGLY SHEEP >>

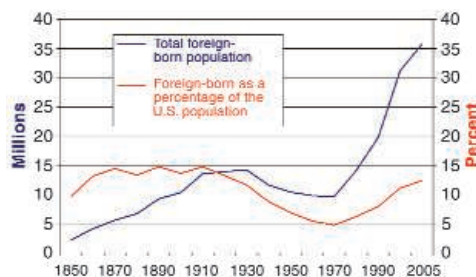
Australian scientists are hoping to find a few good mutants among the nation's 100 million sheep, mostly highly prized merinos.

In an effort to improve the breed, the South Australian Research and Development Institute has launched a campaign to locate "extreme sheep" throughout the country. "We are trying to encourage wool producers here to retain sheep they would otherwise cull, so that we can study what is going wrong in [their] skin and follicles," explains Simon Bawden, a molecular biologist at the institute.

Advertisements have drawn 10 samples from sheep with various skin and hair problems, such as highly matted wool, straight rather than crimped fibers, or bare patches. The team hopes to find the relevant genes so breeders can eventually produce sheep with finer, stronger, and more plentiful wool.



Extremely bald sheep.



## U.S. POPULATION GROWS, DIVERSIFIES

While population growth in poor countries is booming, growth in developed nations has ceased—with the exception of the United States, which is slated to hit the 300 million mark this fall. "The

number 3 spot in global population [after China and India] is something that we are likely to hold onto for a very long time," said demographer Carl Haub of the Population Reference Bureau of Washington, D.C., which last week issued its annual World Population Data Sheet.

As the chart above shows, the percentage of non-native born U.S. residents is now approaching late 19th-century levels after hitting a low of 5% in 1970.

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