bacteria along with the bad, leaving any resistant organism a "clear field." But Novick cautions that *S. aureus* could develop resistance to a drug based on the *Lactobacillus* protein as well. "You never want to say a bacterium isn't able to do something," he says.

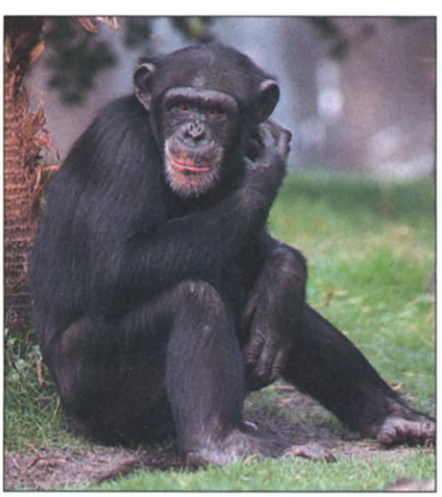
Still, experts are intrigued by the possibility of using the purified *Lactobacillus* protein instead of the intact microbe to protect wounds against infection. Even though *Lactobacillus* is one of the most benign bacteria known, "you're going to find one person who'll succumb to an infection," says Novick. Further studies will be needed to determine if *Lactobacillus* and its protein can be put to clinical use. But this might be one germ worth snuggling up to. **–EVELYN STRAUSS**

LABORATORY ANIMALS

Congress OKs Plan for Retired Chimps

Congress has approved a retirement plan for chimpanzees that have helped to further medical science. On 6 December, the Senate put the final stamp of approval on the Chimpanzee Health Improvement, Maintenance, and Protection (CHIMP) Act. It authorizes the Department of Health and Human Services to spend $30 million to set up and administer a system of retirement sanctuaries for chimpanzees no longer needed for research. But congressional supporters say that funds for the plan, which they hope will save money in the long run, should come out of the National Institutes of Health's (NIH's) existing budget. President Clinton was expected to sign the bill this week.

U.S. biomedical research facilities care for approximately 1600 chimpanzees. In the early 1980s, NIH launched a breeding program to satisfy an expected growth in demand for chimpanzees in HIV trials. But that demand never materialized, once researchers discovered that most chimps do not get sick from HIV. In 1997, the National Academy of Sciences recommended that the government set up a system of sanctuaries to house unneeded animals, which can live for up to 50 years, more cheaply than at research facilities.



CREDIT: (BOTTOM) JIM TUTEN/ANIMALS, ANIMALS

Green acres. Congress wants sanctuaries for chimpanzees no longer needed in research.

The final bill represents an unhappy compromise both for NIH officials and many animal welfare activists. Although activists sought "permanent retirement" for the chimps, the legislation now allows research on retired chimps in "special circumstances," after approval by the sanctuary's board of directors and a 60-day public comment period. "I don't think that's any kind of protection at all," says Eric Kleiman, a spokesperson for In Defense of Animals, an animal rights group in Mill Valley, California.

On the other hand, NIH, which wanted the chimps available for future research on new pathogens or new vaccines, says it must now clear a formidable administrative hurdle to do that. "Even though theoretically animals could be removed ... there are too many provisos," says Judith Vaitukaitis, director of the National Center for Research Resources at NIH, which oversees federally funded primate research centers. Chris Heyde of the Society for Animal Protective Legislation, a Washington, D.C., group that lobbied for the bill, agrees that it would be difficult to bring the animals out of retirement. "We were able to sit down and put hurdles in the way," he says. "The permanent retirement [concept] is still there."

–GRETCHEN VOGEL

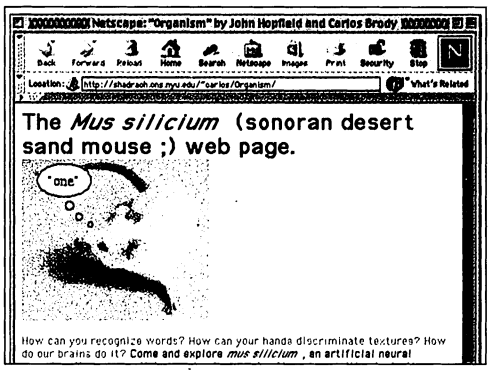
NEUROSCIENCE

Neural Net Contest Draws Online Crowd

When two computational neuroscientists announced an online contest last September to reverse-engineer a simulated set of neurons, neither thought the event would attract much attention beyond a small group of their colleagues. But *The New York Times* ran an article on the competition, and 25,000 people visited the site. Now, the researchers think they may have found a new method for stimulating scientific communication.

"The idea of a puzzle really tickled people," says Carlos Brody, a postdoctoral researcher at New York University. He and his former adviser, Princeton University neuroscientist John Hopfield, challenged the community to figure out the principles underlying a neural network they'd created that responds to sounds. Contestants could feed the program their own sound files and analyze the neural net's simulated bursts of activity, or they could look at archived responses to sound files Brody and Hopfield had presented to the net. In an optional second part of the contest, researchers were asked to use the principles derived from Brody and Hopfield's program to build their own artificial neural network. The networks had to recognize the spoken word "one." The prize: $500 and a Visor hand-held computer.

And the winner is? Twenty groups submitted answers to both contests, but the first to get it right was a team led by David MacKay, another former student of Hopfield's now at Cambridge University in the United Kingdom. (MacKay says he used no insider information.) The team noticed that the simulated neurons didn't seem to care how fast a test word was spoken. As long as the right sound elements occurred in the right order, the artificial neurons gave the right response. This could only occur, they reasoned, when neurons associated with different elements of the test word fire synchronously. "Whether [this mechanism] is actually being used in the brain, I don't know," says MacKay, "but it's a great idea." One of MacKay's students, Sebastian Wills, then constructed a neural network built on this principle.



The challenge. Contestants described how an artificial neural net, nicknamed *Mus silicium*, recognizes the word "one."

Hopfield says such contests sharpen neuroscientists' ability to analyze experimental data. "We thought it would be instructive for the neurobiology community, especially the young community," says Hopfield. Solving the puzzle was possible if a researcher just stepped through it logically, says David Tank, a neuroscientist at Lucent Technologies' Bell Labs in Murray Hill, New Jersey. "I think it turned out to be a valuable thing to try."

Other researchers are not sure the technique is widely applicable. "I think it's kind of fun," says Larry Abbott, a physicist at Brandeis University in Waltham, Massachusetts, "but I don't think it's a sensible way to disseminate scientific results in general." Abbott thinks the future of this kind of contest—if there is one—lies in posing unsolved problems and coordinating researchers' activities via the Web. "The key is to come up with the right questions." **–JOHN S. MACNEIL**