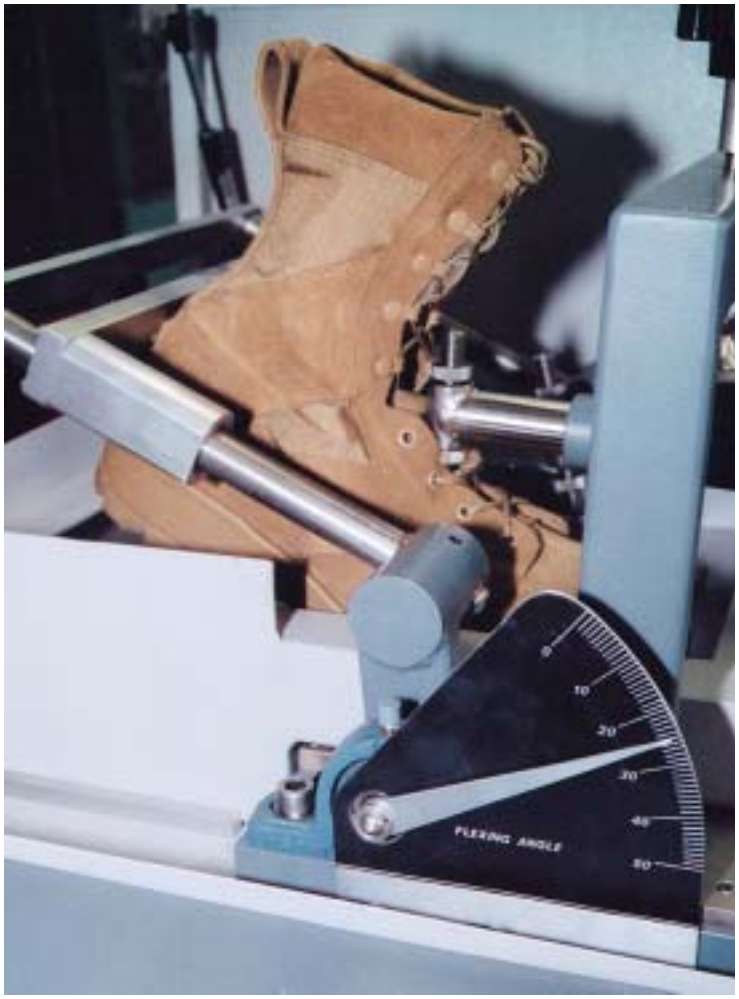

COUNTERING **NERVE AGENT**

FOR more than 15 years military officials sought the Food and Drug Administration's approval of a drug that combats the deadly nerve agent soman.

In February 2003 pyridostigmine bromide — dispensed in blister packs to some 250,000 U.S. service members during the first Gulf war because of a soman threat in the Persian Gulf region, but not FDA-approved to counter nerve agent at the time – got the FDA's seal of approval.

The drug was first approved by the FDA as a treatment for myasthenia gravis, a chronic neuromuscular disease. British researchers proposed using PB as a protection against soman in the late 1970s.

PB must be taken before exposure to soman and is used with the nerve-agent antidote injector kit. Every service member deployed to a high-threat area is given a seven-day supply of PB, and units have an additional seven-day supply for every soldier.

Soldiers can take the drug longer than 14 days if the risk of exposure is great and leaders deem it necessary, but they don't have to take PB continuously to benefit from it. — *Fort Detrick Standard*

BEATING UP **BOOTS**

IT'S easy to determine whether the insides of boots have gotten wet after the boots have been standing in a pool of water and tossed around thousands of times.

Researchers simply remove pieces of absorbent paper that were tucked inside the boots.

"We beat the heck out of boots here," said Michael Holthe, lead project engineer for footwear programs at the U.S. Army Soldier Systems Center in Natick, Mass. "They have to be durable, but also help soldiers perform their jobs."

The whole shoe flexer, modified for water penetration testing, is among a collection of machines in the Footwear Performance Laboratory that mercilessly tests boots. The only Defense Department facility of its kind, it's been operating for more than a year and is a central location for technical testing and research and development for all military footwear, Holthe said.

Military boots are categorized as extreme cold-, cold-wet-, temperate-, hot-wet- and hot-dry-weather, and blast protective. The only footwear SSC doesn't test is chemical-biological protective.

Besides the Infantry Combat Boot, other current and pending projects for the boot-testers include the Improved Hot-Weather Combat Boot for the Army, the Army's new modular footwear program and improved blast- protective footwear.

Equipment in the lab is used to check footwear for heat insulation, shock attenuation, pressure distribution, water penetration, flex resistance and dynamic stiffness.

Research has shown that footwear that can properly absorb shock results in fewer lower-leg injuries and less down time for soldiers. — *U.S. Army Soldier Systems Center*

For more information about SSC, visit the organization's Web site at www.natick.army.mil.

INSECTARY AIDS RESEARCH

Doug Valentine (both)

THE insectary at Walter Reed Army Institute of Research in Maryland painstakingly breeds tens of thousands of insects every week.

The institute breeds aedes, anopheles and culex mosquitoes used in research toward development of repellents, drugs and vaccines to protect service members from such diseases as dengue fever, malaria and encephalitis.

The Defense Department has about a dozen insectaries around the globe; however, WRAIR's, established in 2000, is one of the largest and most elaborate, said COL Daniel Strickman, chief of its entomology department.

Infected mosquitoes — kept under lock and key to protect employees — are used in human-volunteer studies to test the effectiveness of drugs and vaccines.

Female mosquitoes are used in experiments; males are simply studs. But before they'll breed, female mosquitoes need a blood meal, which comes in from the belly of anesthetized hamsters. The female mosquitoes then mate and lay eggs.

The lab's weekly demand of aedes aegypti mosquitoes alone is roughly 4,000.

Because troops are deployed to Southwest Asia, where leishmaniasis-carrying sand flies flourish, the insectary's expertise with the phlebotomine family is being tapped. Lab researchers have been able to determine that 1.5 percent of the sand flies in Southwest Asia test positive for leishmaniasis.

Visceral leishmaniasis, which affects the spleen and liver, can take months to develop, and is considered fatal if left untreated. For this reason, military health providers need to know what to look for and how to treat it.

Lab data alert commanders to potential health risks to their soldiers, and help ensure precautions — such as treating tents, spraying pesticides and stressing to soldiers the importance of using insect repellent — are taken to prevent disease. — *Karen Fleming-Michael, U.S. Army Medical Research and Materiel Command Public Affairs Office*

QUICK FIX TOOL ROOM

THE Stryker Brigade Combat Team likely wouldn't be as effective without the relatively new Field Repair System, according to soldiers who used the system during training at the National Training Center at Fort Irwin, Calif.

The mobile tool room and work station offers welding capability, has work lights and "more tools than you can imagine," said FRS operator SPC Brandon Schmidt of the Stryker Brigade's Field Maintenance Company at Fort Lewis, Wash. The FRS includes a lot of tools that basic-issue tool boxes don't have.

Schmidt said the FRS plays an important role in the new SBCT because it helps the company address mechanical problems faster and thereby function more efficiently in the field. — *SPC Alfredo Jimenez, 28th Public Affairs Detachment*