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Experiments Raise Hopes on Curbing Use of Animals in Laboratory

Bayard Webster

It may be possible to drastically reduce the number of laboratory animals used in medical and drug safety tests because of recent advances in test-tube experiments, a group of scientists reported yesterday.

The scientists, along with the leader of an animal rights coalition and a representative of the cosmetics industry, expressed such a hopeful possibility at a seminar on "Progress in Alternatives to Animal Testing" held at Rockefeller University here.

Growing awareness of the sensitivity of animals has recently been touched off by wide publicity surrounding some examples of apparently extreme cruelty to primates in a Maryland laboratory. Many scientists as well as animal welfare advocates have been led to seek more humane ways of conducting drug testing and medical research with live animals and to investigate ways in which their use could be curtailed, if not eliminated.

"It's not going to be an easy job," said Dr. Dennis M. Stark, chairman of the seminar and director of the university's Animal Laboratory Research Center. "But I think it's becoming apparent that there is a potential for eliminating or modifying many of the existing whole animal test systems that are now in use."

Animals such as mice, rats, rabbits, dogs and primates are currently used in huge numbers, estimated in the several millions yearly in the United States alone, to test the toxic levels of drugs, food additives, pesticides, cleaning products, toothpaste, hair dyes, cosmetics and a host of chemicals. Two of the testing procedures that have aroused the most controversy and opposition are the Draize test and the LD50 test.

The Draize test, named for the codeveloper of the test, John Draize, a former pharmacologist with the United States Food and Drug Administration, uses six white rabbits for each test. The substance to be tested is placed in one eye of each rabbit, with the untested eye being used as a control. The degree of the irritant's damage, which often is clouding of the lens or blindness, is visually recorded by an observer and the degree of irritation recorded. Rabbits are used for this test because their eyes are more sensitive than humans' and they have no tear ducts with which they can wash out the irritant.

The LD50, a symbol meaning lethal dose 50 percent, determines the amount of any substance that is sufficient to kill exactly half of a group of laboratory animals. The test often involves force feeding or injecting animals with chemicals that often cause pain before the animals die.

Although no specific substitute test has yet been proposed to replace the LD50 test, groups such as the Pharmaceutical Manufacturers Association have abandoned their support of the test. And David Rall, the Federal Government's chief toxicologist and director of the National Toxicology Program calls the LD50 test an "anachronism," adding that it provides little useful information about the health hazards to humans from chemicals.

Dr. Ellen Borenfreund, as associate professor of Rockefeller University's Laboratory Animal Research Center on the city campus, told the seminar that in-vitro, or test-tube, experiments with cells from mice, hamsters and other animals, had achieved the same results as the Draize test.

Using 40 separate toxic agents, she found that by counting with a microscope the damaged cells that had been washed from an animal's eye, a more accurate and permanent record of the damage done by the agent could be obtained, thus making it unnecessary to repeat the test as is unusually done with the Draize test to insure accuracy. The cell-washing technique also showed a close correlation with the results of the Draize tests.

Henry Spira, coordinator of the coordinator of the Coalition to Abolish LD50 and the Draize Tests, an umbrella organization of more than 100 animal welfare groups, told the seminar that he thought many people had "moved away from emotional atrocity mongering" and were now attempting to change the laboratory practices that affected animals.

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