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COVER Photograph of a dwarf plant of *Arabidopsis thaliana* isolated from a population of transformants that had been generated by infecting seeds with *Agrobacterium*. Genetic analysis indicates that the recessive mutation that caused this phenotype is due to the insertion of a T-DNA from *Agrobacterium* into a gene that in the homozygous state confers dwarfism to the plant. The plant pictured was 3.5 centimeters in height. The portion pictured is 3 centimeters in height. See page 1351. [Photograph by DeVere Patton, senior photographer, E. I. du Pont de Nemours & Company, Wilmington, DE 19898]

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Animal Rights and Animal Wrongs

At a recent demonstration against a new animal care building at the University of California, animal rightists put up a sign that said, "These animals are to be used by torturers, prisoners, and murderers." Torturers? Some procedures that these animals undergo, such as removal of blood samples and surgery under anesthesia, are no different from procedures performed on humans at any hospital. Prisoners? The cages in a research laboratory are no different from the cages in a humane society or a veterinary hospital. Murderers? A strange term to apply to animal experimenters when a conservative estimate is that pounds and shelters kill a hundred stray cats and dogs for every such animal sacrificed in research. Such perversion of language and misleading rhetoric are among the reasons that many view with increasing skepticism the argument that animal rights organizations are "sincere," even though many of their followers certainly are. The time has come to take important steps to protect both research and the image of humane societies as legitimate protectors of kindness to animals.

Ten years ago, before the current wave of legislation, it could fairly be said that some animal experiments were done improperly, in inadequate facilities, or with inappropriate supervision. These days are largely past. The current protocols for care and treatment of animals are so stringent that most modern animal facilities are models for responsible and considerate treatment. Yet the ever-escalating demands to set standards beyond the norm even for hospitals are leading scientific groups to the conclusion that the agenda is not the prevention of cruelty in research, but rather the absence of all animal research.

The first step in clarifying the roles of the participants must come from the animal rights organizations. They must state clearly whether they accept the necessity of using animals in any kind of research or not at all. If they choose "research yes, cruelty no," they must be willing to take a stand against extremists who denounce the very facilities that research institutions have developed at great expense to ensure humane handling of animals. If animal rights organizations choose the "no animal research" alternative they should then be willing to face the AIDS patient, the cystic fibrosis patient, the cancer patient, and present their case that preventing the sacrifice of even a small number of animals is more important than attempting to find cures for these diseases.

Another important step is to have scientists recognize that their public information roles must be enormously enhanced. The Foundation for Biomedical Research is already providing some of the needed figures and brochures. Scientists must begin to speak up on television programs and in local interviews to present the case for science. We and our societies must learn how to respond in the era of the 30-second sound bite—not with long and scholarly answers to questions on what is admittedly a complicated subject, but with answers that are short and illuminating. Salient facts, such as that thousands of cats and dogs are killed in research while millions are killed as strays by pounds and shelters and billions of animals are killed for food, should be presented. More scientific societies need public information offices to provide volunteer speakers with information to replace innuendoes with facts. Then more scientists would feel confident in accepting invitations to speak on behalf of research.

The public should be informed or reminded that research on animals also benefits other animals. An image has been created that *Homo sapiens* is ruthlessly exploiting other species in order to improve only his own lot. In fact, a vaccine for rinderpest, a virus that kills millions of cattle slowly and painfully, was developed by animal experiments; the vaccine is now applied by the World Health Organization to millions of cattle in Africa. A vaccine for the deadly feline leukemia was developed through research with cats. A vaccine for anthrax evolved from experiments with sheep. Animal research to help animals is an extremely important story, but it has been obscured by headlines screaming about species exploitation.

A campaign of public information clarifying the real issues and emphasizing the benefits of basic research to both humans and animals, carefully carried out, is urgently needed. The goal should not be to turn around advances made in the care of animals in research, in which constructive humane societies can play a worthy and legitimate role. The goal should be to defeat inappropriate restrictions that may hinder research designed to benefit both animals and humans.—DANIEL E. KOSHLAND, JR.