## Rights for Farm Animals

The Humane Society of the United States is embarking on a major campaign to promote more humane treatment of livestock. Although they far outnumber laboratory animals, farm animals have pretty much missed the ark when it comes to legal protection. They are exempted from the Animal Welfare Act and from state anticruelty laws. Transport laws do not cover the 99 percent of animals that travel by truck, and the Humane Slaughter Act excludes chickens and animals subjected to ritual slaughter.

The Humane Society contends that large livestock producers keep millions of cattle, pigs, sheep, and chickens in conditions of excessive crowding or isolation, with bad flooring, bad air, and other conditions that induce discomfort and thwart natural animal behaviors. The society says animals are subjected to such measures as debeaking and castration that would be unnecessary under better conditions, and that they are stuffed with unnecessary hormones and given drugs to ward off diseases to which their stressful living conditions make them susceptible.

Humane Society veterinarian Michael Fox says the crusade is part of a larger goal, which includes the promotion of more healthful eating habits and the encouragement of small producers. Ultimately the purpose is to demonstrate that large-scale agribusiness is unsound both economically and environmentally, leading to what Fox calls "agricultural nemesis."

The society does not want to antagonize "good" farmers by calling for new regulations. Rather it is seeking to forge an alliance between small farmers and independent producers and members of the public who care about food, animals, and the environment.

The Humane Society is supporting a bill introduced by Representative James Howard (D–N.J.) which would create a commission to investigate animal husbandry practices. Fox says the society also would like to see new money appropriated for research in humane husbandry and for stockman training and accreditation programs. Finally, it favors the adoption by production associations of voluntary codes of treatment modeled on those that have been adopted in Britain and Europe.

Fox, who has just produced a book on the subject, has been pressing the cause of farm animals for years. But he thinks the time may be ripe for progress as the number of small and part-time farmers (as opposed to the medium-sized family farms) has been increasing, and large-scale capital- and energy-intensive operations are becoming less economical.

—CONSTANCE HOLDEN

## Gene-Splicing Protein to Have Orphan Drug Status

A genetically engineered version of the protein alpha-I antitrypsin (AAT) has been granted orphan drug status by the Food and Drug Administration, becoming the first recombinant DNA product to be so designated since passage of the Orphan Drug Act last year. Designation as an orphan drug speeds up the FDA review process and provides the manufacturer tax credits to offset some of the costs of developing products for a market deemed too small to be profitable. The Orphan Drug Act could prove a boon to small biotechnology companies, which lack the resources to develop drugs for limited markets.

The research and development of AAT for pharmaceutical use is being sponsored by CooperBiomedical, Inc., in Palo Alto, Calif., and includes two other corporate collaborators—Zymogenetics, which did the genetic engineering, and an undisclosed chemical company, which is doing the scale-up fermentation of the yeast cells that make AAT. CooperBiomedical then takes responsibility for purification and testing of the product.

The protein will be tested for safety and efficacy in emphysema patients who produce limited amounts of it because of a genetic defect. AAT ordinarily is made in the liver and carried by the blood to the lungs where it neutralizes the enzyme elastase, which, if unchecked, can damage lung tissues.

About 54,000 people in the United States are likely to develop emphysema because of a purely genetic deficiency in AAT, but only about half of them are candidates at any one time for preventative treatment with the protein. Clinical trials, which could begin within 6 months, will involve administering the protein intravenously. The company has long-range hopes for other uses of AAT, including to treat fire victims suffering the effects of smoke inhalation and cigarette smokers suffering from chronic exposure to smoke.

It is unlikely the company could recover its investment on AAT from sales to patients with genetic emphysema, according to the company's executive vice president Paul Kirk. "If it's effective against other emphysemas by another route of administration, we could get our investment back," he adds.—JEFFREY L. FOX

## NRDC Compiling Mammoth Nuclear Reference Series

"For the arms-disarmament expert who has everything" (in the words of Jerome Wiesner), the Natural Resources Defense Council (NRDC) has produced a detailed reference book on "U.S. Nuclear Forces and Capabilities."

The volume is the first to emerge from NRDC's Nuclear Weapons Databook project. The multi-year undertaking, Wagnerian in scope, is designed to provide the public with a central source of information about global arsenals, nuclear proliferation, the history of nuclear weapons, their environmental effects, arms control, and nuclear strategy.

Volume one was compiled by NRDC physicist Thomas B. Cochran, who directs the project; William M. Arkin of the Institute for Policy Studies; and physicist Milton M. Hoenig of NRDC. The book contains extensive data on what the current modernization of the U.S. arsenal entails. It also highlights the fact that nuclearization of all branches of the armed forces "extends far beyond what is known by the public." The information was all collected from unclassified sources. Nonetheless, the Department of Energy, when asked to review the material, suggested that publication was "not in the national interest."

Work on the second volume, about the U.S. nuclear weapons production complex, is nearing completion; volume three, on Soviet nuclear weapons, is scheduled to appear late next year. A number of small foundations are providing financial support.

—CONSTANCE HOLDEN

## Denton Plan May Limit Perinatal Research

Senator Jeremiah Denton (R–Ala.) is planning to propose a measure that some fear could prohibit the use of federal funds for perinatal research. A staff committee aide to the senator, who is now circulating the proposal, says that is not his intention, but a strict interpretation of the language could limit a broad area of research.

The proposal states, "The director of the National Institutes of Health and the director of any national research institute may not conduct or support research . . . on a living human fetus or infant," unless the experiment is intended to benefit the fetus or infant, or unless the risk to the fetus or infant "is no greater than those encountered in daily life or during the performance of routine physical or psychological examinations or tests."

The language was intended to conform with restrictive legislation that was introduced last year in the House by Representative William Dannemeyer (R–Calif.). But some observers say that Denton is suggesting an even stiffer measure. The Dannemeyer measure says that federally funded scientists "shall not experiment on a living human fetus or infant, whether before or after an induced abortion," unless it ensures the survival of the fetus. Denton's proposal applies to all infants, "regardless of whether or not an abortion is intended or has been performed," the proposal states.

One Senate staff aide alleges that such legislation would have prohibited the testing of the polio vaccine on children since it was uncertain at the time whether the vaccine would be of clear benefit. At the very least, according to a spokeswoman for the American Academy of Pediatrics, "The Denton language raises questions whether perinatal research would be prohibited." The Denton aide, however, says that the amendment would simply put into law a part of the federal regulations governing human experimentation.

In any event, Denton is planning to offer his proposal as an amendment to a National Institutes of Health bill. The bill is up for consideration in the Senate but is unlikely to go anywhere soon. Several senators are joining Senator Bob Packwood (R–Ore.) to put a hold on the bill until an agreement can be reached about fetal research. This could tie up the creation of an arthritis institute.

—MARJORIE SUN

## Pork Barrel Funds Not Yet Released

The fiscal year (FY) 1985 budget request for the Department of Energy (DOE) contains no funds to complete research labs at Catholic and Columbia universities, which were beneficiaries of celebrated pork barrel amendments proposed on the floor of the House of Representatives last May (*Science*, 3 June 1983, p. 1024).

Congress eventually approved an initial installment of $5 million for each university for FY 1984, but told DOE not to disburse any funds until it has reviewed proposals for the facilities. According to a DOE official, the proposals have yet to be submitted and thus there was no basis on which the department could request funds for FY 1985. This means that the universities may have to persuade Congress to add funds to DOE's budget request, and that will be difficult in view of the publicity surrounding last year's events. Columbia's facility will cost about $20 million and Catholic's will cost about $14 million.

Meanwhile, Schlossberg-Cassidy and Associates, the lobbyists who steered the Catholic and Columbia amendments through the House, have announced a new addition to their consulting firm—Carl Godfrey, Jr., former executive assistant to House Speaker Thomas P. O'Neill, Jr. (D–Mass.). O'Neill's support was a decisive factor in securing passage of the funds for Catholic University.

—COLIN NORMAN

## Nonproliferation Proposals Challenged

Four members of Congress have accused the Reagan Administration of attempting to weaken reviews of nuclear exports. Reacting to a draft document they have obtained that proposes changes in the export review procedures, the congressmen charge that the proposals "could result in a significant loosening of U.S. constraints on proliferation."

In general, the objections center on what the critics see as a move to weaken the so-called second-look philosophy embodied in the U.S. Nuclear Non-Proliferation Act (NNPA), which currently requires multiple reviews of some nuclear exports. For example, the Administration must give separate approval not only for the initial export of nuclear fuel but also for its later disposal or retransfer. The Administration's draft proposals would apparently eliminate some requirements for separate reviews and make it easier for multiple licenses to be issued to particular countries.

The proposed changes are the result of a lengthy review of the NNPA procedures, which the Administration believes are currently so cumbersome that they make the United States an unreliable supplier. The four congressmen—Edward J. Markey (D–Mass.), Richard L. Ottinger (D–N.Y), Howard Wolpe (D–Mich.), and Morris K. Udall (D–Ariz.)—have objected that the revisions are being developed "without either congressional consultation or the benefit of public participation."

They have urged that the proposals be held in abeyance until Congress is fully briefed and the public has been given the opportunity to make its views known.

Ron Bettauer, an attorney in the State Department who has been trying to revise the export review procedures, says they are not yet in final form and claims that "the changes are not major."

He points out that the revisions are not legally subject to review by Congress. When they are ready, the revised procedures will be published in the *Federal Register*, he says.

—JEFFREY L. FOX