



Abstract: *Legal Rights of Animals in the U.S.A.*

The legal rights of animals as expressed in the law of the United States of America are presented together with a discussion of state laws, acts of Congress, and court action resulting therefrom. A list of pending bills is included and controversial areas in which final decisions have not yet crystallized into legal form are summarized. Rights well-defined in law (although not every right applies to every group of animals) begin with: (1) the right of species to exist; endangered species are protected against killing, and the law calls for preservation of critical habitat; (2) the right of individual animals to protection against cruelty, torture, torment and unnecessary killing or mutilation; (3) the right to necessary food, water and shelter which cannot be abrogated by abandoning a dependent animal; (4) the right to a painless death; (5) a qualified right to pain-relieving drugs; (6) the right to safe transport; (7) the right to protection from sadistic exploitation in animal fighting ventures. Failure of the law in the U.S.A. to mandate all basic animal rights is discussed — **C. Stevens**. (Abstract reprinted from *Anim Regul Stud* 2:93-101, 1979.)

COMPANION ANIMALS

Pharmacology of Succinylcholine

Succinylcholine (SCh) is a neuromuscular blocking agent whose muscle relaxant action can lead ultimately to death from hypoxia induced by peripheral respiratory paralysis. Succinylcholine chloride, also known as Anectine, Quelicin Chloride, Scholine Chloride, Sucostrin Chloride and U-Tha-Sol, has been used as a method of euthanasia for pets and racehorses suffering on-track breakdowns. Because the action of the drug has virtually no effect on the central nervous system, injected animals remain conscious though paralyzed, and thus they are unable to exhibit signs of pain or distress.

A recent report in *JAVMA* (176: 646-647, 1980) on the clinical pharmacology of succinylcholine states that the only proper use of the drug is as an *assisting* muscle relaxer to facilitate surgical manipulations: "Succinylcholine has no sedative, narcotic or analgesic properties. Therefore, it should not be used as an anesthetic agent or as a restraint agent for surgical procedures in nonanesthetized patients. Its use for euthanasia is strongly condemned. Because SCh depresses respiratory muscle function at all clinically useful doses, its use should be restricted to mechanically ventilated patients. Succinylcholine is a useful, safe anesthetic adjunct for inducing muscle relaxation in anesthetized mechanically ventilated patients."

USDA Licenses Vaccine for Canine Parvovirus

A vaccine has been licensed by the U.S. Department of Agriculture (USDA) for the prevention of a canine disease that has recently broken out in New York City and along the Eastern seaboard.

Dellen Laboratories of Omaha, Nebraska, was issued the first license

on February 6, 1980 to produce and distribute a vaccine for canine parvovirus.

According to Pierre Chaloux, Deputy Administrator of the USDA's Animal and Plant Health Inspection Service (APHIS), parvovirus infections in dogs are usually characterized by severe diarrhea and dehydration, loss of appetite, vomiting, high temperature, and low leukocyte count.

Canine parvovirus is contagious and usually spreads quickly in dog colonies, kennels, and in situations where dog-to-dog contact is prevalent. The virus is often transmitted by ingestion of dog feces and is believed to be a mutant form of the virus responsible for feline panleukopenia.

The infection, which was unknown until the latter part of 1978, has been reported in all areas of the U.S., and also in Australia and the U.K.

LABORATORY ANIMALS

Exercise Cage for Rhesus Monkeys

Monkeys are highly social animals, but standard laboratory cages do not take this into account — usually because of lack of funds and space. In Switzerland, Dr. J. Jaekel at Ciba-Geigy has developed a 'play' cage in which groups of monkeys are allowed to exercise for a certain period every day. Recently, an article appeared in *Laboratory Primate Newsletter* 19(1): 3-5, 1980) describing the development of an exercise cage at Alabama's Auburn University and the author's experience with the device.

The cage at Auburn is 2.1 x 2.7 x 2.1 meters in size. A mobile wall is constructed on one side opposite a guillotine door and entrance runway so that recalcitrant animals can be forced to leave if necessary. However, the animals can be trained to exit with only minimal prompting. The exercise cage was used on a daily basis with a group of ten rhesus monkeys, and a majority of the animals

were trained to exit without recourse to the mobile wall. (Dr. Jaekel had a similar experience in his facility.) With sufficient assistance, each animal could be allowed at least an hour in the cage, five days a week, and compatible monkeys could be exercised together.

CKC Moves to Ban Laboratory Breeders

A recent decision by the Canadian Kennel Club (CKC) to pass a by-law amendment prohibiting membership to any person, party or company supplying animals for experimental purposes is encountering strong opposition from the biomedical research and teaching community. The Canadian Veterinary Medical Association and the deans of the Canadian veterinary colleges have expressed support for a protest of the amendment, which is awaiting ratification by the Minister of Agriculture. In the United States, the National Society for Medical Research (NSMR) has voiced its fear to Canadian authorities that "if this travesty [the CKC proposal] were allowed to be adopted, it could have a serious and undesirable impact internationally on biomedical research" (*NSMR Bulletin* 31:3, 1980).

According to an editorial in *Dogs in Canada* (71:5, 1980), the move to ban breeders and sellers of laboratory dogs from the CKC was motivated by "a deep love and respect for dogs." The editorial also states that although animal experimentation can be expected to be tolerated and even supported by society in general until suitable alternatives are found, dog breeders, "...whose lives are dedicated to the betterment and protection of those creatures they are responsible for bringing into this life," cannot condone the involvement of fellow breeders in supplying dogs for research.

The use of pure-bred dogs for biomedical experimentation has tra-

ditionally been defended on the grounds that in contrast to random source animals, animals of standard genotype and known medical history make better research subjects. A major pitfall in animal experimentation is the presence of pathogenic organisms in laboratory animal colonies, which leads to outbreaks of disease and subsequent severe financial losses. However, subclinical diseases, commonly found in random source animals, can be much more insidious, sometimes contributing to incorrect interpretation of experimental results (*New Scientist* 73:130-131, 1977).

Although dogs bred for the laboratory are initially much more expensive than dogs obtained from pounds, the latter may have lower survival rates after surgical procedures, necessitating the use of more animals. Dr. Michael Festing (Laboratory Animals Centre, UK) has illustrated this problem by referring to an American study in which 93% of laboratory-bred Labradors survived experimental open heart surgery compared to 73% of healthy 'conditioned' pound dogs (*New Scientist* 73:130-131, 1977).

Researchers appreciate the long-term scientific and economic benefits of using pure-bred animals, but they by no means form a united front against the use of random source animals, particularly in the case of acute nonsurvival studies, where death may occur under less stressful conditions than it would in a pound. Thus, when a measure was passed on 22 April 1980 by the Connecticut State Senate prohibiting the sale, disposition and use of impounded dogs for medical research, it was a decision made in spite of the claims of researchers that their work would suffer if pound animals became unavailable. Public pressure, in the form of letters (one senator received over 600), petitions and telephone calls, exerted a great deal of influence on the legislature. In New York last June, similar action

led to the repeal of the Metcalf-Hatch Act, which required taxpayer-supported shelters to supply state laboratories and medical schools with animals for experimental purposes.

FARM ANIMALS

Battery Hen Welfare

According to a report in *Feed-stuffs* (April 7, 1980, p. 19), entomologist R.D. Hall (University of Missouri) presented the following observations at the Midwest Poultry Federation's annual convention: The Northern fowl mite, *Ornithonyssus sylviarum*, is a common external parasite infecting cage-housed layer hens and has a significant impact on their productivity and welfare. Dr. Hall emphasized that the battery cage method of husbandry tends to intensify this problem because a) de-beaking reduces preening substantially; b) cage confinement of hens eliminates dustbathing opportunities; and c) although susceptibility to mites varies among individual hens according to breed, birds selected for cage environments are more susceptible than others.

Hall went on to point out that the indiscriminate use of acaricides may result in excessive residues in eggs and meat and health hazards to industry workers.

Intensive Livestock Production: "Costs Exceed Benefits"

A number of arguments to support the thesis that the costs to society of intensive animal production exceed the benefits have been presented by P.G.C. Dunn (*Vet Rec* 106:6, 1980). Particular concerns include overstocking to increase productivity with market-price fluctuations, greater disease incidence and need for drugs and loss of rural labor and its replacement with energy-consuming machinery. Dunn also states: "By tolerating such practices [of 'factory'

farming] we support a system of animal agriculture which is immoral," and that "Society is paying heavily for it in terms of unemployment, animal welfare, drug abuse, environmental pollution, etc. It is time that we looked at the structure as a whole and stopped applying sticking plasters to the cracks appearing on the surface." He concludes that while one cannot blame the individual farmer or veterinarian for these developments, the system can only be changed by collective action such as the government laying down firm guidelines as to what are acceptable husbandry practices and also providing a "farm labor subsidy" which would allow farmers to utilize human labor and enable them to adjust gradually to more appropriate systems of livestock production.

Abstract: Jewish Attitude Toward Slaughter

The relationship of man to animal in Jewish literature is discussed in this paper. A person may kill an animal for food consumption, but whether such killing is a necessary evil or a good thing in itself remains open. Life is sacred. All the laws of Jewish religion are pushed aside if human life is in danger, with only three exceptions. The taking of an animal's life involves responsibility.

Killing animals for human need is allowed according to Jewish law. This covers the acquisition of other products from the animal, as well as animal experimentation. On the other hand, causing pain to the animal for play or sport, (hunting, etc.) is not permitted.

Many Jewish laws are described which were formulated only to save animals from cruelty. People should behave in as humane a manner toward their animals as possible.

There are many restrictions in the Jewish religion concerning meat consumption. If these restrictions were not intended to prevent man

from using the animal for food, then they show man that an animal is a living being, and taking its life in order to feed man should not be done without thinking about it—**I.M. Levinger**. (Abstract reprinted from *Anim Regul Stud* 2:103-109, 1979.)

Abstract: Influence of Kosher Slaughter on Blood Supply and Nervous System

Schechita, the Jewish method of slaughtering animals for food, must be carried out on a living and healthy animal. During shechita the soft parts of the neck, including trachea, oesophagus, carotid arteries and jugular veins are severed. The spinal cord and its circulation remain intact.

The main blood supply to the brain comes through the internal maxillary artery. During ligation of the carotids an anastomosis through the occipital artery and the vertebral one permits the blood flow through the vertebrals into the carotids and thus the blood reaches the brain. If both carotids and occipital arteries are ligated the brain receives no arterial blood supply, and the animal dies.

Immediately after shechita blood pressure falls rapidly and no blood flow can be measured in the internal maxillary artery. Therefore no further blood reaches the brain at that time. The pressure in the brain drops even more rapidly than in the maxillary artery, due to the venous outflow which is not replaced by arterial supply. This fact causes an immediate shock in the slaughtered animal.

The functioning of the brain is very rapidly reduced, for immediately after the cut the electroencephalographic recording loses its characteristic form.

The perception of pain is greatly reduced by a clean cut and by the distraction of the animal. It is very difficult to determine exactly the pain perception of animals. One of

the best methods is the registration of electroencephalography. Stimulations which cause pain under normal conditions could not be characterized in the recording if given after shechita. Accordingly it is assumed that the perception of pain stimuli disappears immediately after the cut.

The equilibrium center loses its normal function within 8-10 seconds. The corneal reflex shows individual variation, but generally disappears in cattle later than in small ruminants. Immediately after shechita, there is a motor resting phase followed by strong muscular (reflectoric) activity.

Shechita can be classified as a good slaughter method under the conditions that it is performed by a trained person with suitable sharp and long enough instruments and that there are no difficulties in performing the cut—I.M. Levinger. (Abstract reprinted from *Anim Regul Stud* 2:111-126, 1979.)

WILDLIFE

Abstract: International Ivory Trade

The international trade in ivory in the nineteen-seventies is described using data published by government statistical offices. Hong Kong and Japan are the main centers of this trade, for both raw and carved ivory. The main exporting countries in 1976 and 1977 were Kenya, Zaire and Uganda, and it is estimated that ivory from over 130,000 elephants entered world trade during 1976 and 1977.

The price of ivory increased dramatically in the early nineteen-seventies, as did the quantity of ivory involved in the trade. This is illustrated by the increases in volume and value of Japan's ivory imports over this period. The high price of ivory led to large-scale poaching and illegal trading. Discrepancies between official export figures for African countries and official import figures for

countries in the Far East and Europe indicate the scale of the illegal trade.

Although many countries have introduced legislation concerning the ivory trade, several major consumer countries still exert no controls and thus keep the market open. Work by the IUCN/SSC Elephant Group has shown that the ivory trade has been an important factor in the decline of elephant populations in many parts of Africa. It is suggested that effective control of the trade could provide a valuable source of revenue for many developing African countries—**S.M. Wells and J.A. Burton.** (Abstract reprinted from *Anim Regul Stud* 2:75-91, 1979.)

Environmental Hazards Posed by Exotic Fish

"Released by accident, ignorance, or well-meant efforts to solve environmental problems and develop new game fish," exotic fish have become a major source of biological pollution, according to a Department of Interior (DOI) news release dated 7 April 1980. A recent survey contracted by the U.S. Fish and Wildlife Service's National Fishery Research Laboratory (Gainesville, FL) reveals that 84 exotic fish species have been found in U.S. waters. Of these, 39 species have established breeding populations, with eight showing rapid or major expansion over the past six years. Only one species, the European brown trout, is considered by the U.S. Fish and Wildlife Service to represent a beneficial introduction by virtue of its popularity with U.S. game fishermen.

Although the Service acknowledged the survey's warning that "some foreign fishes are cause for serious concern," the agency plans to pursue a policy of "intensive research" on the harmful effects of imports on U.S. water systems rather than stopping further introduction of exotics. Some wildlife biologists view the execution of this policy as a mon-

umental, if not impossible task, maintaining that even the most thorough scientific studies cannot adequately predict the response of a foreign species to a new environment.

One example of the long-term problems associated with introducing nonindigenous fish is the case of the common carp, imported in the early 1800's by a Nevada game commissioner and stocked in the state's local streams. The carp, unencumbered by its native predators, acclimatized quickly and began spawning and feeding in the surrounding streams and lakes to the detriment of indigenous fish and vegetation. Compensation was not forthcoming on any level as the carp did not prove popular for eating (it had been touted as a superb tasting fish), or for sport. According to Dr. George Laycock, author of *Alien Animals*, "...the carp is so entrenched that even today there is little hope of eradicating it, despite continuing research management efforts." Indeed, the U.S. government spends millions annually in attempts to keep the carp under control.

More recently, the grass carp was introduced from the Orient into several states by federal, state and private agencies on an experimental basis for aquatic vegetation control. The grass carp is now present in at least 34 states, and as the DOI notes, "...this effective forager is established in the central Mississippi River area and may have a severe impact on migratory waterfowl and/or the river's commercial fisheries that rely on wetland vegetation." Dr. Laycock reports that as late as 1978, the Ohio Division of Wildlife was experimenting with a new variety of grass carp to see if it could free hatchery ponds of the algae that choke them in the summer months. Nine years earlier, at a Conference on Exotic Fishes and Related Problems held in Washington, DC by the Sport Fisheries Institute and sponsored by the American Society of Ichthyologists and Herpetologists, pro-

fessionals pleaded for serious research on the grass carp prior to any additional stocking.

Aquarium species are also becoming a priority concern. In 1979 alone, the U.S. imported 130 million fish, primarily aquarium specimens for the pet trade. Among these are piranha, the small carnivores that have been known on occasion to attack livestock and humans. At present, there are no established piranha populations in U.S. waters. However, released "pets" have been found in Michigan, Ohio, Pennsylvania and Florida, where a gravid female red-bellied piranha appeared last spring in a Boca Raton swimming hole. The DOI mentions that it is against most state laws to dump exotic species into open waters, but goes on to say that "...some misguided owners do so rather than destroy their pets."

In 1965 or 1966, the walking catfish, a native of Southeast Asia, escaped from an aquarium fish farm in Florida where it was being held as brood stock. Now, notes the DOI, "...it is considered one of the most harmful introductions in North America. This airbreathing fish 'walks' overland on its pectoral fins to invade new river systems, sometimes stopping traffic as hoards wriggle across highways. It has a voracious appetite and competes with natives like the largemouth bass and bluegill in freshwater communities."

The Gainesville survey offers a substantial amount of data to support a causal connection between the introduction of foreign fish and critical, sometimes nearly uncontrollable environmental hazards. As Dr. James A. McCann, Director of the National Fishery Research Laboratory, stated: "[New foreign fish species] ...may prey on native fish, compete for food, hybridize, carry new parasites and disease, and alter the natural environment so that native species cannot thrive. Some species pose a direct danger to humans."