Domestogenic Diseases

Michael W. Fox, Editor-in-Chief

The term ‘iatrogenic disease’ refers to a variety of disease states which may result from a certain course of treatment. Iatrogenic diseases have important legal and ethical implications. Their identification has done much to further the recognition by the medical profession of the patient’s right to informed consent. For example, the iatrogenic effects of cancer chemotherapy or of some new surgical or medical procedure may cause considerable physical and psychological suffering. Certain drug combinations or idiosyncratic patient reactions may have serious iatrogenic consequences, and under most circumstances, the patient should be warned if such sequelae might occur.

The concept of iatrogenic disease needs further expansion and refinement in relation to animals and their welfare. Steen Bech-Nielson (JAVMA 175:1304-1307, 1979) has discussed the significance of nosocomial disease, those hospital-acquired ailments associated with veterinary care. Another category, which might be termed ‘domestogenic animal diseases’ exists, and their recognition has considerable relevance to animal welfare. As the term ‘iatrogenic’ conveys the clinical treatment-induced nature of the problem, the term ‘domestogenic’ similarly implies that there are variables in animal husbandry which act as agents in the etiology of disease states or disease susceptibility, and that animal care technologies may exacerbate certain of these disorders.

A great range of inherited anomalies such as hip dysplasia in German shepherds, achondroplasia in Bassett hounds, strabismus in Siamese cats, unstable temperament in purebred dogs, fowliness in poultry and the porcine stress syndrome are essentially breeder-created or environmentally influenced. Such anomalies are either absent or occur at an extremely low frequency in wild species, most probably due to a combination of factors such as hybrid vigor and rigorous natural selection. When these factors are attenuated or eliminated through selective breeding, genetically anomalous and phenodeviant forms appear with increasing frequency, either inadvertently or through deliberate selection for reasons of taste or utility. Hip dysplasia is an inadvertent consequence of selecting for sloping hindquarters in German shepherds. The metabolic and neuro-endocrine disorders of certain lines of dairy cattle (termed ‘production diseases’ by Professor David Sainsbury) are associated with exceptionally high milk yield.

Some of these genetically based anomalies may be either buffered or aggravated by the way the animal is raised, handled, housed and fed. For example, while the porcine stress syndrome is absent in some breeds of pig, it is present in others such as the Pietrain and may be intensified by infrequent handling and total confinement housing. As Sir Kenneth Blaxter has shown (Vet Rec 103:323-324, 1978), extremely complex disease states can be created by a combination of factors in the technology of animal care and production such as genetic lineage, the presence or absence of antibiotics or essential nutrients in the feed, feed contaminants such as aflatoxins and enterobactins, and the husbandry system under which the animals are kept (e.g., stocking density, humidity and ventilation).

The Benefits of Tender Loving Care

Walter B. Gross, Editorial Advisory Board

Tender loving care (TLC) as a disease control measure is sometimes considered a relic of the days before the advent of wonder drugs. In fact, TLC is still a very important feature in disease control and treatment. As applied to animals, TLC infers gentle, compassionate care. Not only is the animal unafraid of the handler, it also welcomes the handler’s presence.

The majority of people oppose inconsiderate handling of animals on moral and ethical grounds. This opposition is easier to maintain when one is well-fed and remote from animals or interacts with only a few animals. On the other hand, it becomes more difficult when one works with large numbers of animals and is under increased pressure to get the work done. When an animal does something which irritates the handler, such as moving at a critical moment, it is easy to react violently toward the animal as a means of discouraging such actions, or relieving frustrations. Following such treatment, the animal becomes fearful of the handler and thus even more difficult to handle. If one does not understand their behavior and appreciate their social needs, one can easily adopt the view that animals are unfeeling creatures.

Millions of animals are employed annually in research projects and testing programs. Often, their caretakers have little real interest in the results. To them, it is a job to be done as quickly and as easily as possible. Furthermore, researchers and directors of testing programs gain little or no prestige from the time spent working directly with animals. Their administrative requirements and laboratory duties may leave little time for developing a relationship with the animals. It is thus understandable how laboratory animals can be reduced to things to be utilized as required. Humane societies have helped the welfare of animals by promoting standards for space, ventilation, sanitation and nutrition. However, they have also encouraged the ‘thing’ attitude by focusing attention on physical requirements.

Recently, Drs. Cornhill, Nerem and Levesque (Ohio State University) reported that rabbits which were given TLC had from 1/3 to 1/2 the amount of atherosclerosis while being fed a high level of cholesterol than unhanded rabbits on the same regimen. They suggested that TLC, or the lack of it, could alter the results of other experiments.

Our research has shown that chickens which are frequently gently handled before and during experiments are superior experimental animals. Their...
W. B. Gross

responses are more consistent, and they are easier to handle. Their immunological response to antigens (vaccines), blood protein levels, and abilities to convert feed into growth and to resist stresses are all increased. Some differences between experimental groups can only be demonstrated with birds which have been handled with TLC. Genetic selection for many factors can only be done with chickens receiving TLC and ideal physical environments. When chickens are not well cared for, environmental effects tend to mask their genetic potential.

To summarize, experimental animals which are exposed to TLC under good environmental circumstances are truly superior. In addition, they experience less trauma, and fewer are needed to obtain better quality results.

Animals employed in agriculture have similar problems to those used in labs. Back in the days when poultry flocks were small, their environmental and disease stresses were high. However, many of the flock owners had a real feeling for the birds and understood their behavior. As flocks became larger, the environmental and disease stresses were reduced. Administrators became more and more remote from the birds and tended to think more about their physical needs than about their social ones. As the size of flocks increased, even those in direct contact with the birds had less time to be cognizant of their social needs, much less to satisfy them. Furthermore, the competitive process in the marketplace which resulted in increased quality of products at decreased cost to the consumer tended to relegate animals to the status of things. However, this feeling is far from universal. Many people who work with poultry today have developed an understanding of their behavioral and social needs and therefore treat them gently and with compassion. The birds perform better, and the caring people make more profits than the uncaring. Similarly, dairy cattle and other domestic animals which are exposed to TLC are easier to work with, more productive and of course more profitable. Again, as in the case of laboratory animals, TLC is indirectly beneficial to humans.

TLC is known to be an important aid in training animals. The most impressive trainers are those who are able to obtain superb cooperation and responses from animals without uttering harsh words or inflicting pain. TLC is an attitude and as such cannot be put into force through legislation. What is needed is a fostering of a caring attitude which is more widespread knowledge about animal behavior and appreciation of the animals’ needs by those who work with them. Toward this aim, humane societies should increase their educational efforts directed at those who use animals as pets, in research, in testing and in agriculture. Greater understanding of an animal’s behavior results in respect for and compassion toward animals in general. With tender loving care, the animal’s life is made more pleasant and the human’s endeavors are more satisfactory.

Humane societies should also promote research on animal behavior, particularly of animals that are closely associated with man. Moreover, they should encourage colleges and universities to require courses in animal behavior for all students who might work with animals after graduation. Among these students are those studying biology, psychology, animal agriculture and veterinary and human medicine. These people are especially important because they are likely to have future decision-making power. Their actions and attitudes toward animals will influence those with whom they work. They should be strong advocates of TLC.

The “Reasonable Ground” as a Problem of the German Animal Protection Act

Gotthard M. Teutsch, Editorial Advisory Board

The German Animal Protection Act has been widely praised for its high ethical aims. Indeed, the law’s intentions as well as its specific prohibitions should help to ensure a remarkably advanced stage of animal protection in the Federal Republic of Germany. However, laws can provide only a degree of deterrence. Human conduct depends more on moral consciousness than on the fear of penalty.

How Effective is the Law?

One measure of the efficiency of a law is the associated number of sentenced violations. Other valid criteria for judgment exist, but it is difficult to ignore the fact that the number of sentences has been steadily decreasing since the animal protection law went into effect in 1972. According to an estimate by K.D. Wiegand (1979), only one out of every 5000 (unnotified as well as notified) offenses in the Federal Republic of Germany result in prosecution and sentencing.

The interpretive freedom allowed by the German Animal Protection Act is a major source of its ineffectiveness in that it leaves the judge with no objective criteria on which to base a decision. This uncertainty stems in part from the newly-introduced phrase, “reasonable ground,” a term assumed to be helpful in evaluating judicial arguments. In reading the term “reasonable ground,” the philosophical and ethical meaning of the word “reason” cannot be overlooked. Obviously, not every intellectually understandable cause can be accepted as a “reasonable ground” (von Loeper, 1979). Hence the uncertainty.

Commentaries on the Meaning of “Reasonable Grounds”

Paragraph 1 of the German Animal Protection Act states the law’s fundamental aim and gives the general directive under which exceptions can be made: “This act serves the protection and well-being of animals. No one may be permitted to inflict pain, suffering or damage upon an animal without reasonable grounds” (emphasis added). Although no formal explanation of the term “reasonable ground” is offered, one can assume that a) all actions explicitly permitted by the Act are justified as being based on “reasonable grounds,” and that b) all actions explicitly prohibited by the Act are unjustifiable because they evidently lack “reasonable grounds.”

When situations arise which are not expressly discussed in the Act, the judge must make his or her own decision as to what constitutes “reasonable grounds” for exempting a particular action from the proscriptions of the law. The latitude