BRILL

Introduction

I would like to dedicate this issue to my first boss after veterinary school, Dr. David H. Neil, who died earlier this year. Dr. Bernie Rollin, one of our general editors, was a friend of mine, sharing my interest in horses. He introduced me to Dave, with whom he collaborated on lab animal issues, and I drew illustrations for Dave for a lab safety brochure for our university. This evolved into a friendship, and Dave, the Director of Laboratory Animal Resources at Colorado State University, offered me a job as a clinical laboratory animal veterinarian after graduation. Bernie encouraged me to take the job, as he felt the field needed veterinarians who were “on the side of the animals”. I had little knowledge of laboratory animals except cats and dogs, but Dave offered to mentor me and followed through. Yet not only did he guide me through the special knowledge of laboratory animal species and techniques so that I became capable in these in a few months, but by his examples and our conversations I found that he was truly sympathetic to lab animal needs, as well as a friend of other animals as well. Dave and a core of others created the Humane Society for Larimer County, which took over animal control from the city and instituted animal adoption of at-large or abandoned animals. When sodium pentobarbital, a controlled drug, was allowed to be administered by non-veterinarians for peaceful euthanasia in animal shelters, he sent me to teach Larimer County Humane shelter personnel how to do it properly. He and Associate Dean of Veterinary Medicine at CSU (who had formerly been a military lab animal veterinarian who developed the artificial hip), Dr. Harry Gorman, worked with Bernie on needed legislation for laboratory animals, which eventually became an amendment to the Animal Welfare Act, which addressed pain in lab animals, review and oversight by responsible institutional committees, and animal care standards, which would have significant impact for lab animal welfare. Dave was truly an animal advocate in both his professional and private life, and I will always be grateful to him and Bernie and to my university that, in my capacity as a clinical laboratory animal veterinarian, I was able to have been an animal advocate as well.

The use of animals for research has been a contentious issue virtually since humans started to try to answer questions by using them for that purpose. Truly some of the first attempts in the name of science or knowledge were

crude and reflective of a mindset that had little regard for animal suffering, and could be horrific (i.e., vivisection). Those of us in the lab animal field were and are in it because of the accumulation of knowledge and the benefits to humans and other animals. However, abuses of animals have occurred even in modern times, and this made oversight of the research and testing of animal use a priority. Our authors have come at the issues from different viewpoints, from regulatory to animal welfare concerns. We solicited articles from workers in the field—researchers, laboratory animal veterinarians, animal care personnel—as well as animal welfare/rights advocates. The field of laboratory animal research has much to thank for the thoughtful and concerned people who raised questions about lab animal practices and made them known to the public. We now have laws and regulations that protect many species used in many types of research, teaching and testing, but there is definitely room for improvement. Our authors have presented some of the history of animal research and regulation, as well as evolving potential problems, and resolution of existing problems.

Javier Guillen and his colleague, Gary L. Borkowski, have contributed an exhaustive summary of the function of the Association for the Assessment and Accreditation of Laboratory Animal Care, or AAALAC. This international body, made up of experts in the field of laboratory animal care, promulgates standards conforming to U.S. and EU regulations, guidelines and directives. AAALAC accreditation is an accomplishment most lab animal facilities aspire to, as it confers status in the research field and automatically assures publications that authors from that institution have met standards for animal care and projects have been reviewed for scientific and ethical value. I can vouch for the thoroughness of AAALAC certification (and recertification, which occurs every three years), having gone through the process several times, and written and assembled the program description for submission for our university (which ran to 500 pages each time) twice.

Humans are primates. We share genetic characteristics with our cousins, non-human primates (NHP) to a greater or lesser degree, but always more than other recognizable families (i.e., Felidae [cats], Canidae [dogs], Rodentia [rodents]). Therefore, on the surface, NHP's should be the best model for humans in research, says author Mark Prescott.

The use of NHP's in research, however, has always been a worrisome issue; they are just too much like us, and the general public empathizes with them. Now with the new techniques of gene editing available, a new industry of Ga (Gene Altering) NHP research has exploded, especially in China and Japan. Prescott makes the argument that local oversight bodies made up of cohorts

may be influenced to approve these projects, even though harm/benefit may be heavily weighted on the harm side. Large numbers of animals must be subjected to operative and other less invasive procedures to produce scant reward of GA NHPS, as the targeting of genetic manipulation is at present imprecise and most primates have a relatively long gestation and usually have single offspring. Besides, the genetic manipulation may have unintended consequences, leading to suffering in these GA NHPS. Prescott suggests a second review by a less intimately involved body before approval of a project. This is a compelling article which should be read by anyone interested in NHP research.

Franco Mutinelli and Massimo Boldrin here have discussed the history of EU and Italian regulations regarding laboratory animals and their impact on the processes of approval and oversight of animal research and testing projects.

Simone Pollo and Augusto Vitale present a short history of human use of animals in research, and philosophical and societal views of it, including the concept of “speciesism”, in which we humans tend to hold the interests of humanity foremost. They insist this should be balanced, case by case, with harm to animal subjects and scientific value. They also advocate education of researchers and evaluators of projects for approval with up-to-date information about their animal subjects (i.e., species behavior, environmental conditions and experimental procedures, control of pain and stress, etc.) to help them make ethical decisions in the conception and approval of animal research projects.

Larry Carbone has provided us a thoughtful examination of the challenging topic of evaluating animal pain in the lab setting. Human recognition of animal pain is confounded by several aspects, not the least of which is that probably all animals respond as prey (even traditionally “predator” species) to unfamiliar or otherwise threatening humans, leading to underestimation of animal pain. Other reasons animal pain may be underestimated include pressure to make the project successful, peer pressure or institutional pressure to allow it to proceed, and resistance to admitting being the origin of the pain, for example. He supports his assertions with extensive citations, which are interesting and illuminating. He concludes with several suggestions for animal ethics committees who must pass approval on potentially painful projects.

Linda Panepinto, manager of a Yucatan miniature swine facility, tells us what refinements she and her staff and researchers made when the slow-growing tropical and virtually hairless animals were first expected to thrive in conventional farm facilities, with farm diets. Beyond environment and diet, however, was the use of non-invasive handling techniques, centering on the Panepinto sling, and even allowing unrestrained daily injections without stress

(by using a thin needle in an accessible and less enervated site, for a food treat). The use of the sling, especially, made procedures with these swine (and other swine and species) simple and less stressful for researchers and animals alike.

It is my hope that the reader finds this selection of articles interesting and informative.

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