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ANIMALS IN LABORATORIES GET IMPROVED HOUSING AS INSTITUTIONS COMPLY WITH P. L. 89-544

Recent visits to scientific institutions by AWI representatives indicate that prompt compliance with the requirements for humane care and housing of research animals is being sought in institution after institution. For example, at Montefiore Hospital, the animals are now under the care of Dr. Ruth Kaslow, whose outstanding quarters and care at Brooklyn Jewish Hospital were featured in the AWI manual, *Comfortable Quarters for Laboratory Animals*. Major changes have been made, and others are in progress. A group of old cages have been removed and three rooms divided into pens in which dogs are maintained on wood shavings. Five additional rooms are to be built on the roof, where the dogs will also be housed in compatible groups on wood shaving bedding. The only cages, when the facility is completed, will be ten post-operative cages, 48" long for small to medium sized dogs and four 60" long for large dogs. The staff caring for the animals has been raised by Dr. Kaslow from four to seven. The dogs still housed in cages, while awaiting construction of the new rooms, are released for exercise three times each day.

At New York Medical College, old cages for both dogs and rabbits had just been replaced by new ones which conform with the regulations promulgated by the Secretary of Agriculture under P. L. 89-544, the Laboratory Animal Welfare Act. Flooring which cannot catch the animals' feet is part of the requirements. For cats, resting boards are mandatory. Some of the cats had cages conforming to the regulations, others were on order, or remodeling for compliance was being undertaken. Dogs are released from their cages to a runway for exercise. Larger runways are planned when a new research building is constructed.

At Mount Sinai Hospital, the halls were lined with old dog cages being discarded and new ones being moved in. All the new cages have resting boards, and some are extra large in size. Cats have two resting boards in their new cages, and some will be housed in compatible pairs. New monkey cages are being installed, replacing the low, dark cages which have caused complaints for many years by animal welfare workers who have visited the extensive animal quarters of the hospital. On the eighth floor, part of which extends to a roof area, runways are being constructed for the dogs.

At Hahnemann Medical College in Philadelphia, completely new accommodations for animals were shown to AWI Laboratory Animal Consultant, Mrs. Robert Dyce. Cages with resting boards, in sizes to comply with U.S.D.A. standards were ready for incoming dogs and cats. New rabbit cages were ready, too. However, the majority of the animal population as of December seventh were still housed in the old quarters for fear of spreading disease into the new quarters. A fresh start is needed in many laboratory animal quarters throughout the nation; and the four institutions mentioned in this report are to be congratulated on the major improvements, all conducive to comfort and health of the experimental animals benefiting from the changes.

Until P. L. 89-544, the Laboratory Animal Welfare Act, went into effect, AWI efforts to obtain needed changes in the treatment of the animals fell, to a great extent, on deaf ears. Full implementation of the law can be expected to create a new atmosphere in the nation's medical research institutions, in which the experimental animal may be viewed in a more sympathetic light and maintained under conditions corresponding with the importance of the contributions these animals have made to medicine.

THE FOUNTAIN REPORT

To those who have been dismayed over the years by the failure of the National Institutes of Health to obtain proper care for experimental animals used in a large proportion of the projects it has paid for, the Fountain Committee Report* comes as no surprise. But it does document the grave deficiencies in the administration in the National Institutes of Health, Public Health Service, Department of Health, Education and Welfare, which have led to so much useless animal suffering as well as to so much waste of government money.

The Fountain Committee was not concerned with animals at all. They are never mentioned in the course of the 113-page report; but the decline in quality of NIH-supported research, the management practices characterized more than once by the Committee as "inept," and the unfair way in which favorites have been played in dispensing government money all have a bearing on the animals used in the research.

For many years the AWI has emphasized that quality, as opposed to mere quantity, is vitally important

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USDA ISSUES REVISED LIST OF DEALERS LICENSED TO HANDLE RESEARCH ANIMALS

A revised list of dealers licensed to handle dogs or cats in interstate commerce and destined for use in research laboratories has been released by the U. S. Department of Agriculture.

The list was published in the Federal Register on December 22, 1967.

As of December first, USDA'S Agricultural Research Service had licensed 181 dealers in 35 states and the District of Columbia. The dealers were licensed after submitting applications and appropriate fees to ARS Animal Health Division representatives in the various States.

Animal Health Division veterinarians have inspected the premises of all licensed dealers to determine if the facilities comply with standards established by USDA for enforcement of the Laboratory Animal Welfare Act (PL 89-544).

When facilities do not comply with the standards, the dealers are advised of existing deficiencies and corrective measures that must be taken to bring facilities into compliance. Some dealers who could not meet the requirements have already gone out of business, while others have invested hundreds of thousands of dollars to make extensive improvements in order to comply, ARS officials said.

The standards for humane care and treatment establish requirements for housing, feeding, watering, sanitation, ventilation, shelter, separation of species, and veterinary care on dealer premises and during transportation.

The Act requires dealers who buy, sell, or transport dogs or cats in interstate commerce, or sell dogs or cats to research facilities covered by the Act, to obtain a license from USDA and to conform to the standards and regulations providing for humane treatment for animals. The dealers indicated on their applications that they will handle over 239,000 dogs and 82,000 cats annually.

Research facilities covered by the Laboratory Animal Welfare Act are required to register with the Department. By December 1, 1967, 517 research facilities with 1,499 inspection sites in 44 States, Puerto Rico, and the District of Columbia, had been registered.

The Fountain Report

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in research using animals. The Report has this to say on page 44:

“. . . the extension of support to an increasingly larger proportion of poorer quality research raises some fundamental questions concerning the objectives of Federal grants.

“What is the merit and the national purpose of supporting research that fails to meet a high qualitative level? If pedestrian research contributes importantly to the advancement of science, that fact has not been brought to our attention. On the contrary, distinguished scientists have warned:

“In the advancement of science the best is vastly more important than the next best. Mediocre research is generally worse than useless, and the same may probably be said of teaching.’

“It has been stated, further:

“In science the excellent is not just better than the ordinary; it is almost all that matters.’”**

On page 42, documentation is given on “the steep decline since 1956 in the quality of research projects approved for NIH support.”*** And Dean emeritus of Duke University School of Medicine, Dr. W. C. Davison, complaining about the adverse effects on medical education of too much money for research, is quoted (p. 46) as saying: “In fact, some outside sponsored projects have been so huge and so hastily and badly planned that the principal investigators, through boredom or fatigue, have refused to write up the results. They have literally been ‘choked by dollars.’”

A remarkable example of the expenditure of tax funds for research of doubtful quality is given in the section of the report entitled “VI. Sharing an Institution's Total Research Costs — The Sloan-Kettering Grant.” NIH undertook to provide almost half (47.3 per cent) of this institution's total operating budget for five years—this despite the fact that NIH study sections had previously denied support to projects which Sloan-Kettering itself, nevertheless, supported. According to the Report, “The several study sections which reviewed and recommended the disapproval of recent Sloan-Kettering research proposals gave these explanations in their resumes on five of the applications:

“This unimaginative proposal plans to do studies which have become almost routine in institutions with active hematology and radioisotope services. There is no research support warranted for this plain data-gathering exercise.

“Disapproval is recommended. The conceptual approach and experimental plan are remarkably unsophisticated. There is nothing in the application to inspire confidence that continuation of this work would add to the understanding of the mechanism of action of anti-tumor agents.

“There is nothing in this proposal to indicate that the applicants are in a position to contribute significantly to this heavily worked area.

“Study section believed that it was logical to precede this study with appropriate pilot studies before initiating the proposed research, which is based on supposition. Concern was expressed also that the applicant was unaware of the immunological procedures requisite to this proposal. Accordingly, a recommendation of disapproval was voted.”

Lack of quality in the research grants has been matched in the management and bookkeeping areas. On page 59 the Report states:

“A highly permissive approach reflecting a philosophy of scientific freedom seems to have been carried over to the processing activities. From the NIH level, this approach has permitted, and in some instances encouraged, the institutes to go their separate ways. In NCI, it has been extended to the operations of branches, sections, and individuals. As a result, clerks and scientific administrators have developed a number of procedures based on personal inclinations rather than on well-defined overall objectives and common goals, with the result that similar work is not done consistently or uniformly by all performing it. In fact, one official

summed it up this way:

“We have extended academic freedom to the book-keeping department with results too horrible to contemplate.’

“This somewhat overstates the situation; nevertheless, it is indicative of tendencies observed.”

The planning of new programs, too, has been ultra permissive. On page 3 the Report states:

“The procedure used in initiating another new institutional grant program — the Health Sciences Advancement Award—was found to be irresponsible, unscientific, and contrary to the best interests of the academic community and the Government. The first awards under this program were made:

“(1) without adequate study of the needs of various types of institutions for development funds;

“(2) without careful formulation of program objectives and policies;

“(3) without a prior public announcement of the new program and its eligibility conditions;

“(4) without open competition for the available funds; and

“(5) without clear statutory authority.”

On page 30 a curious conversation is recorded from an NIH Committee meeting:****

“COMMITTEE MEMBER. There is something I would like to know more in curiosity than anything else because I think it bears on what kind of attitude we should take toward this.

“We have only three applications. The program wasn't announced, and I don't know what the mechanism was for getting these three applications into the hopper, but were they asked or suggested to them that they apply, or did they hear about the program and—

“NIH OFFICIAL. It was suggested to them, each and every one, that they apply at least by some official in the Public Health Service.

“COMMITTEE MEMBER. It was a trial balloon you wanted to try out?

“NIH OFFICIAL. This was a trial balloon. And you realize you have three quite dissimilar applications here. This isn't accidental, and we will not open the floodgates. This is not a program in which 50 institutions can apply no matter who or how distinguished they may be.

“COMMITTEE MEMBER. I wanted to know what the origin of the application was.

“NIH OFFICIAL. We are fumbling around here. What we do not want to be is flooded under with 15 applications or 50 or something.’

Concerning this the Report justifiably says (p. 36):

“It is the committee's view that a Federal agency should have a clear conception, based on adequate study, of the specific need for, purpose of, and procedures for administering a grant program before initiating it, rather than start a program as a means of studying the problems—as evidently was done in this instance. It is incomprehensible that NIH should be ‘fumbling around,’ as one of its officials expressed it, when awarding substantial amounts of public money without first formulating a mature and defensible plan for a new program.”

The question of dispersal of public funds is pointedly questioned on page 2 of the Report, as follows:

“The Committee is concerned by the tendency in the Public Health Service to use the services of a small group of individuals for long periods on advisory councils and other major advisory bodies. When some of the same individuals who have served on advisory councils for many years receive substantial NIH grants, and also testify before the Congress in support of

*“The Administration of Research Grants in the Public Health Service,” Ninth Report by the Committee on Government Operations, October 20, 1967. House Report No. 800 available from U. S. Government Printing Office, Washington, D. C.

**President's Science Advisory Committee, *Scientific Progress, The Universities and the Federal Government* (Washington, Nov. 15, 1960), p. 14.

***1961 report, p. 28; 1962 report, pp. 25-26.

****Transcript of meeting, June 2, 1965. Names of participants deleted.

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the agency's appropriations, the appearance of favoritism is unavoidable."

Given facts such as those carefully collected over a period of years by the Fountain Committee, whose first hearings and reports were in 1961-62, it is understandable that knowledgeable animal welfare workers should strongly support continued administration of legislation for humane care of laboratory animals by the United States Department of Agriculture and firmly oppose the Javits-Rogers bill that would transfer jurisdiction to the Department of Health, Education and Welfare, where such extreme mismanagement has occurred with respect to the grants in which research animals are used.

THE ENDANGERED SPECIES BILL

"Many governments have for centuries given protection to those wild animals used for sport and food. It is only recently that animals have been thought worthy of preservation for their own sake and for the appreciation of future generations." This statement, made by Dr. Stanley Cain, Assistant Secretary for Fish and Wildlife and Parks of the Department of the Interior, underlined the basis of the bills to prevent the importation of species of animals in danger of becoming extinct. Hearings were held October 4, 1967, under the chairmanship of Congressman John Dingell, author of one of the bills. Dr. Theodore Reed, Director of the National Zoological Park, summed up the main reason for the urgent need for the legislation when he said:

"The United States is the most lucrative market for birds, monkeys, furs, hides and other animals and animal products. Too often our dollars are the reward sought by the poachers and smugglers.

"We are shocked and horrified by the sudden boom in the demand for the furs of leopards, ocelots, and other spotted cats. The furriers of Paris, London, and New York provide an almost unlimited market, price no object. This trade threatens the quick extermination of many species. The fashion trade is no less menacing to cayman and alligators, as it was some years ago to the egret.

"The pet trade is also booming. Literally millions of wild birds are being taken each year from Central and South America, Africa, and Asia. The wholesale prices of a pair of finches may be as little as \$2, and most of this is air freight and profit.

"Bird collectors receive as little as 1 cent per bird, yet they capture so many that their earnings exceed prevailing local wages.

"Several hundred thousand monkeys and apes are collected each year. Zoos are the smallest part of the market, about 2 or 3 percent. The pet trade is much larger. But here the chief demand is by research institutions. This scientific demand cannot be halted, because the research aims are, in many cases, important. This is all the more reason for moderation, however. If excessive capture brings these species to the vanishing point, medical investigators will be severely handicapped. . . . The case of the orangutan is relevant. This gravely endangered species survives only in Sumatra and Borneo, where it is under full legal protection. The temptation to disregard these laws was great, however. A smuggler would buy illegally-taken orangutans in Sumatra for as little as \$5. They could be sold to zoos for \$3,000 or more.

"Until a few years ago, most orangutans bought by zoos had illegal origins. Zoo buyers could close their eyes to this, because they bought from dealers who in turn bought from other dealers. . . . our American zoos, in 1962, resolved that we would no longer purchase orangutans without evidence of legal origins.

"After several tries, we have made this ban successful. We have enforcement machinery that works, up to a point. But in several years of voluntary efforts, dealing with the orangutan and other species, we have learned why legislation such as H. R. 6138 is essential."

Dr. Reed then submitted the commercial listings of a number of animal dealers showing how they promote purchase of many rare animals. Continuing about the orangutans, he said:

"Last year two orangutans without export licenses were shipped into the United States. We and the authorities know how they were shipped, who received them, and where they are now. The present owner has disregarded our association and its policies. The legal position appears to be that enforcement agencies could have acted at the time the animals entered—but that once they elude Federal agents at a port there is no feasible prosecution.

"Other nations desperately need our help in their efforts to protect their native wildlife. . . . It is not enough to say that an orangutan, for example, is sought for 'zoological or educational purposes.' Orangutans are far too rare and precious for this."

In answer to a question about "a system of regulation in somebody else's bailiwick," Mr. John Perry, Assistant Director of the National Zoological Park, pointed out, ". . . almost every nation in the world today, with a few exceptions, has quite elaborate laws protecting its native wildlife from hunting and capture and other exploitation. The problem is that our market is so lucrative here that it is worthwhile for people to violate those laws."

An example of this was given in testimony by Charles Callison in behalf of the National Audubon Society, in which he quoted the director general of the Ethiopian Wild Life Conservation Department, as follows:

"In Ethiopia, leopards are protected by law, though they may be hunted by sportsmen under special license. However, the numbers taken in this way are negligible and can have no effect on the survival of the species. The chief threat is through illegal trapping which, though we are doing our best to control it, is still widespread, the skins being smuggled out of the country through Djibouti and Somalia. The cheetah, which is completely protected and may not be hunted on license, unfortunately is threatened in the same way, and undoubtedly is in even greater danger of extinction than the leopard."

Lists of the world's rare and endangered mammals and birds compiled by the International Union for the Conservation of Nature are published in the record of the hearings, and discussion of the means of identifying them if their crates are deliberately mislabeled was an important part of the hearings. Legislation similar to H. R. 11618 has been in operation for a few years in Britain; and experience in enforcement there may prove of value in enforcing the bill if it is passed, as it should be, in this session of Congress.

Action is expected in the near future by the full House of Representatives. The Committee on Merchant Marine and Fisheries reported H. R. 11618 favorably on January 31st.

NEW YORK STATE HUMANE ASSOCIATION URGES ACTION ON HUMANE SLAUGHTER BILL

Malcolm Ripley, Chairman of the Humane Slaughter Committee of the New York State Humane Association, announced support of the Association for two identical bills, S. 1498, introduced by Senator Ronald Stafford, and A 927, introduced by Assemblyman Neil Kelleher, in the New York State Legislature. Mr. Ripley said that in addition to the support of the organizations throughout the state affiliated with the New York State Humane Association, the bills have received tremendous support from responsible Jewish leadership. The great majority of Jewish organizations in New York State favor the bills, which would require humane pre-slaughter handling of cattle slaughtered in accordance with religious ritual and would require that all animals killed by conventional means be rendered unconscious prior to shackling, hoisting, or cutting.

This will be the seventh consecutive year in which humane slaughter bills have been introduced in the New York State Legislature. The State of Pennsylvania, one of the three states in which most ritual slaughter is done, passed a law in 1966 including the requirement for humane pre-slaughter handling of kosher-killed beef.

U.S. VETERINARIANS RETURN FROM FOOT AND MOUTH DISEASE BATTLE IN ENGLAND

The last of 12 United States Department of Agriculture veterinarians will return this week from England where they have assisted the British in containing a costly outbreak of foot-and-mouth disease.

Outbreaks of the disease in England have been drastically reduced. However, a total of about 2,000 outbreaks have occurred to date and some 320,000 animals infected or exposed to the disease have been slaughtered.

The U.S. veterinarians have gained invaluable experience while working with the British in their fight against the disease. Dr. Robert S. Sharman a veterinarian with the Animal Health Division of the Agricultural Research Service, who headed the group of 12 veterinarians said upon his return, "We haven't had foot-and-mouth disease in the United States since 1929; but, if the virus is introduced, we will have additional animal health specialists who have participated in the eradication of the disease. There is no substitute for being directly involved in such a campaign to experience the emotional, as well as, the physical aspects, of fighting such a devastating disease."

He explained that, even though the virus was the same type which caused previous outbreaks, the virus may show more virulence than previously or may be more prevalent in one species of animals than another. He said the British outbreaks showed some of these technical differences and it is valuable for our veterinarians to be aware of the infection under various conditions.

Dr. Sharman reported that the group arrived in England on Dec. 4 and was at work the next day, assisting in diagnosing suspected cases, in disposing of infected and exposed livestock, and in disinfecting farms. Dr. Sharman commended the British officials for their competency in dealing with the outbreaks which have been the costliest in British history.

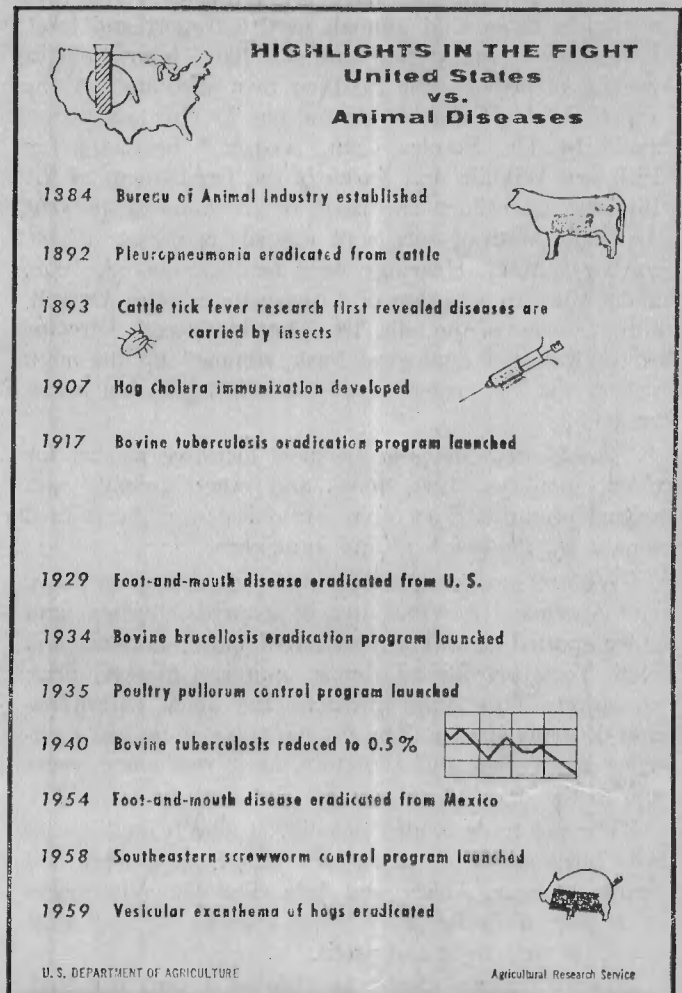
Foot-and-mouth disease is caused by one of the smallest viruses known and is primarily a disease of cloven-footed animals, including cattle, sheep, goats, deer, antelope, and buffalo. The disease is highly contagious. Seven different types of the virus are known. The virus survives for long periods and spreads when an animal is in contact with affected animals or with contaminated materials. Symptoms of the disease include blisters in the mouth, causing excessive salivation, and

blisters between the toes, which often cause severe lameness. Mortality rate for mature animals is low, but losses of very young or very fat animals may be high.

Foot-and-mouth disease is widespread in Europe, Asia, Africa, and South America.

* * *

The following chart was reprinted from the 1961 report on *Veterinary Activities of Agencies of the United States Government in Relationship to Functions Performed by State and Local Governments, Private Groups, and Intergovernmental Organizations*, printed for the use of the Committee on Government Operations. It shows some major achievements of U.S.D.A.'s Animal Health Division and its predecessors.



DR. ORLANS TO SPEAK AT NATIONAL ASSOCIATION OF BIOLOGY TEACHERS CONVENTION

AWI Adviser, Dr. F. Barbara Orland, is scheduled to speak on "Temporary Classroom Homes for Animals" at the Elementary Concurrent Sessions, February 29th, of the National Association of Biology Teachers Convention in Anaheim, California. Dr. Orland's remarks will be illustrated with her film, "Caring for Gerbils," in which a six-year-old boy is shown assisting in the care of the animals while basic information on their housing, bedding, and feeding requirements is given.

A booth exhibit featuring AWI teaching aids will be open to teachers throughout the course of the three-day convention; and the manuals, *First Aid and Care of Small Animals*, *Humane Biology Projects*, and *Studying Our Fellow Mammals*, will be available.

Photographs by Ernest P. Walker showing observation and care of animals by elementary and secondary school students at various age levels will be displayed.

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P. O. Box 3492, Grand Central Station
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Squirrel monkey which had undergone amateur surgery and attempted implantation of electrodes in its brain two weeks before this picture was taken. It died a few hours later as the result of the infected wound hidden by the dental caulk, and general lack of care. (Full report on page 2)

On February 26, 1968, a meeting described as "the most significant"* of all sessions of the National Science Teachers Association (NSTA) Convention in Washington, D.C. considered the "critical issue" of the use of live animals in science class rooms. Six issues were discussed at this general meeting attended by science teachers from all parts of the country. Time for discussion was strictly limited; however, the brief presentation made by Dr. F. Barbara Orlans, member of the Animal Welfare Institute Scientific Committee who has devoted much time and study over a period of five years to the increasing problem of cruel high school experiments, brought a warm response. Spontaneous applause broke out throughout the hall as she finished her summary of the current inhumane situation which permits young students to perform surgical and pathological studies on rabbits, hamsters and other animals. She cited examples of teenagers centrifuging mice until paralyzed or dead, performing skin transplants or parabiosis at home, and using pregnant animals to produce malformed offspring.

Though the Committee on Issues had proposed in its printed statement to leave all decisions about animal experimentation to the individual teacher, a shift was made, and the teachers, by an overwhelming vote, asked the NSTA leadership to formulate a code on the subject.

At the AWI booth the hundreds of teachers who visited it showed a similar eagerness for humane biology teaching materials and for the brief rules** provided by the AWI for posting on bulletin boards. "This is just what we need!" was a typical response by teachers, many of whom read the rules thoughtfully and took extra copies for other teachers. The tremendous demand for the AWI manuals *Humane Biology Projects*, *First Aid and Care of Small Animals* and *Studying Our Fellow*

Mammals made it necessary repeatedly to replenish the supply with cartons full of the educational literature.

The interest of many teachers in finding a way to curb the growing cruelty, however, does not mean that this will automatically take place. There are elements in the scientific and medical community who continue to press strongly for amateur surgery by young people, and this was briefly reflected in the discussion on the floor of the NSTA convention when William Saunders, a high school biology teacher from Maryland, reported on the request of two of his students to do a heart transplant on frogs. When he proposed they try the procedure on dead frogs to see if they were capable of it, they were much disappointed. Students in Columbus, Ohio had dressed up in surgical masks and gowns and gone through the motions of a heart transplant on bull frogs in front of television cameras. A full-page spread of the show was given in the Columbus Evening Dispatch, March 13, 1968. (To obtain expert opinion on this activity, the AWI consulted Dr. Charles Hufnagel, the cardiologist, who accurately summed up the proceedings by pointing out that a heart transplant in a cold-blooded animal is in no way comparable to transplantation in mammals. The hearts of cold blooded animals may beat for long periods after being removed from the animal.)

Particularly horrifying in the Columbus case was the news report that no anesthetic was given the frogs who were, instead, supposed to be rendered unconscious by keeping them on ice. According to the Columbus Dispatch, "Regular ice, which replaced the dry ice used February sixth, proved inefficient as an anesthetic with the cold blooded animals. It melted too fast under hot television lights and did not neutralize the entire body of the larger bull frog. As a result, students could not rely on tape fastenings, and had to hold the frogs with their hands."

After Mr. Saunders' brief comments on the heart transplants, a physics teacher from Columbus took the floor to say that the whole question was out of his field but that the Columbus heart transplants had had the support of the medical people there.

Demonstrating this same type of promotional activity, the American Medical Association feted the amateur surgeons in Detroit including the youth whose dying monkey is shown at the left. The full story appears on pages 2 and 3.

The thorough study undertaken by Dr. Orlans of the situation as a whole is based on statistics on the incidence of science fair projects inflicting death or causing harm to vertebrate animals. Documentation is given at the end of her article which appears below.

THE FREQUENCY OF INHUMANE WORK IN HIGH SCHOOLS

by F. Barbara Orlans, Ph.D.

The alarming increase in the number of students conducting highly unsuitable animal surgery and pathological studies poses a major problem not dealt with by the guidelines used for most science fairs for the past ten years¹ or by the revised guidelines just received as this Information Report was going to press, stating: "This guide for high school students of biology was prepared at the request of the Science Clubs of America and approved by the National Society for Medical Research, the Institute of Laboratory Animal Resources (National Research Council), and the American Association for Laboratory Animal Science (1968)." In both versions the student's attention is specifically drawn to surgery, pathology and other pain causing projects, since these are the only ones named, and since they are inherently spectacular and eye catching, the student is led to make his selection accordingly.

(Continued on page 4)

* *The Science Teacher*. Vol. 35, p. 21, 1968

** See page 8.

SCIENCE GONE WRONG

"Neuro-Electro Telestimulation and Epileptic Form Reactions" (sic) was the title of the winning exhibit of the 16th Mississippi State Science Fair, displayed May 15-18 at the International Science Fair in Cobo Hall, Detroit. Four squirrel monkeys accompanied the exhibit, the last of twenty-five used by an 18-year-old high school boy who started this activity at the age of 14. A stereotaxic instrument was displayed at his exhibit (see photographs page 3) as were the surgical instruments employed in drilling holes and applying skull screws to the monkeys' heads.

The monkey pictured on page 1 was so ill when AWI Laboratory Animal Consultant, Dorothy Dyce, saw it that it was prostrate. Inquiry revealed that the veterinarian who had inspected the exhibits on the first day of the fair told the Director of the fair that the monkey needed veterinary attention, but the young prize-winner, Hartwell T. Ashford, stated that he "could take care of the monkey himself." Two days later the monkey was so much worse that the fair director had it taken to a veterinarian who gave it a shot of penicillin. This proved ineffective.

Enroute to the veterinary hospital to which Mrs. Dyce succeeded in persuading Ashford to take the monkey, he stated that he obtains his squirrel monkeys from the Rider Animal Company of Orlando, Florida, has had some instructions from doctors at the University of Mississippi but does the surgery by himself at home. He said he was visiting Detroit on "an expense account" and hoped to get "a grant" to do more surgery. He said he had done the experiment on the sick monkey two weeks ago — the fourth electrode implant he had done on the same monkey.

In response to questions by Mrs. Dyce concerning a German photographer and two German students who had spoken to Ashford as he and Mrs. Dyce were leaving to take the monkey to the veterinary hospital, Ashford stated that he was going to implant electrodes in the brain of the still intact monkey whose cage had been sitting on the floor of his booth for the past three days. He said his operation would be filmed that night for German television. It later developed that the pictures were also intended for use in the German equivalent of Life magazine.

Following veterinary examination and treatment of the monkey, Mrs. Dyce offered to take it home and nurse it, to which Ashford now readily agreed in view of the critical condition of the animal. The monkey proved to be extremely thirsty and even hungry. It was given the prescribed medication and food and went to sleep.

After caring for the monkey Mrs. Dyce telephoned the Michigan State Health Department to request an opinion on the legality of the proposed electrode implantation. According to Michigan law, animal experimentation may be conducted only in licensed laboratories inspected by the Director of Health, his agents, and the committee appointed by the governor of which Mrs. Dyce is a member. Mrs. Dyce was advised that it would be appropriate for her to take a copy of the Michigan law to Cobo Hall and show it to those who proposed to perform or allow the surgery to be performed on unlicensed premises, and she did so.

Returning to Cobo Hall, Mrs. Dyce found that the Hall closed to the public at nine o'clock, but at this time those who had attended the American Medical Association dinner in honor of the exhibitors returned to the exhibit area. Mrs. Dyce spoke to the Chairman of the Judges, Dr. H. E. Machamer, of Park, Davis and Company who readily agreed that the surgery by a high school student in Cobo Hall would contravene the law. Nevertheless, all the arrangements had been made for the event, and Mrs. Ashford, who had accompanied her son to Detroit, was irate when informed that his international television appearance would be illegal. "We don't have a law like that in Mississippi!" she stated emphatically.

Later that night the monkey died. As subsequently proved by the necropsy performed at Michigan State University Veterinary College, the monkey was suffering from a purulent infection underneath the dental caulking which covered Ashford's bungled surgical efforts. She was afflicted also with a variety of other ills detailed in the Report of Laboratory Examination signed by Dr. Kenneth Keahey (see below).

On learning that the monkey had died, Ashford stated that he wanted to "post" her to find out the cause of death. In view of the fact that the monkey had bitten both him and Mrs. Dyce, however, the Fair authorities

turned the body over to the City Veterinarian for rabies testing. Subsequently, Mrs. Dyce took the body for a complete necropsy to Michigan State University as advised by the Michigan State Department of Health. Dr. Keahey and the two other veterinarians and students who took part in the laboratory examination made no charge for their work. Dr. Keahey said it would be their contribution to a good cause, commenting, "Just think what this would do to our public image to have this student work on a monkey shown on television in Germany and all over the world."

The Director of the Fair, Mr. Lawrence Martin, and its president, Mr. Rodney Christian, who is also President of the International Science Fair Council thanked Mrs. Dyce for heading off the exhibition surgery which they said would have most seriously damaged the reputation of the science fair and of Cobo Hall. They stated that such a thing should never have been considered and it was absolutely without their knowledge.

However, the exhibit itself was shown to busloads full of Detroit school children. They read or were told by Ashford about what he had done to the twenty-five squirrel monkeys he has used. Following are the captions which appeared under the displayed photographs of himself operating on a monkey.

1. Primate anesthetized with 1 cc of Sernylan (diluted to 5 mg. per kilogram) then Xylocaine, a local pain killer, was administered.
2. Monkey was placed in the stereotaxic instrument at 0° vertical and 0° horizontal.
3. The head is shaved and prepared for incision. A lateral incision was made along the dorsal part of the scalp. A hole is drilled perpendicular to the site of stimulation.
4. Skull screws are attached to the skull and dental caulk is applied.
5. The electrode is planted in the desired area. The electrode is tested for a reaction.
6. The purpose of this project is to locate the epilepsy centers in the brain and seek areas of overpowering counter reaction which may lead to electronic control of epilepsy.

The result on the unfortunate monkey at the fair is documented below:

REPORT OF LABORATORY EXAMINATION

Veterinary Diagnostic Laboratories

Michigan State University, East Lansing, Michigan
Case No. 078867, received May 18, 1968. Reported May 29, 1968. Specimen, 1 dead monkey. Sex, F.

HISTORY:

It was reported that this monkey was in a science fair in Detroit. It became sick on a Tuesday and died the following Thursday evening. This animal was on an experiment conducted by a high school student.

GROSS LESIONS:

The dorsum of the head was covered with a molding material through which electrodes were embedded. Below the molding material the skin had become necrotic and in many instances sluffed with a purulent exudate. The area of sluffed skin ranged between 3 and 4 centimeters in diameter. The electrodes did not pass through the skull into brain tissue. There were, however, two small holes through which the electrodes could have passed if embedded properly. There was extensive hemorrhage adjacent to the two small holes through the dorsal portion of the skull in the dura mater covering the dorsal portion of the cerebral hemispheres. There were petechial hemorrhages on the pericardial sac. The liver was mottled and yellowish. There were approximately 15 nematodes in the abdominal cavity and these nematodes were identified as *Brugia malayi*.

LABORATORY FINDINGS:

Rabies examination: Rabies examination was performed because the monkey had bitten Mrs. Dyce and the high school student. The preliminary report has been received from the Michigan Department of Public Health Bureau of Laboratories as follows: Fluorescent antibody examination was rabies negative. Mouse inoculation results will be reported within three weeks.

Microbiologic examination: *Staphylococcus Aureus* was isolated from a swab taken from the subcutaneous tissues of the dorsum of the head. There was a heavy growth of *Penicillium sp.* of fungi from the lungs. *Pseudomonas aeruginosa* was isolated from the small intestine.

Histopathologic examination: Bowman's space in the cortex of the kidneys contained a significant quantity

of proteinaceous material and the tubules of the cortex contained granular casts. There was a slight increase of lymphocytes and plasma cells in the interstitial spaces at the junction of the cortex and medulla. The lung tissue was collapsed and many of the alveoli were filled with fluid. There was a diffuse vacuolation in the cytoplasm of the hepatic cells. These vacuolations were not consistent with those of fatty metamorphosis but more suggestive of hydropic degeneration. The sinusoids of the liver were compressed and rather uniformly ischemic. There was a slight increase of lymphocytes and plasma cells in the regions of the portal triads. There were only minimal changes in representative sections taken of the brain but there was confirmation of hemorrhages in the dura mater reported under gross lesions. There were large numbers of filarid parasites in the blood stream of all organs examined microscopically. These parasites were most numerous in the blood vessels of lung tissue. These parasites are probably immature forms of the abdominal nematodes reported under gross lesions.

CONCLUSIONS:

Subcutaneous cellulitis over the dorsum of the head and (*Staphylococcus Aureus*), toxic nephritis and probably hydropic degeneration of the liver.

K. K. Keahey, Pathologist.

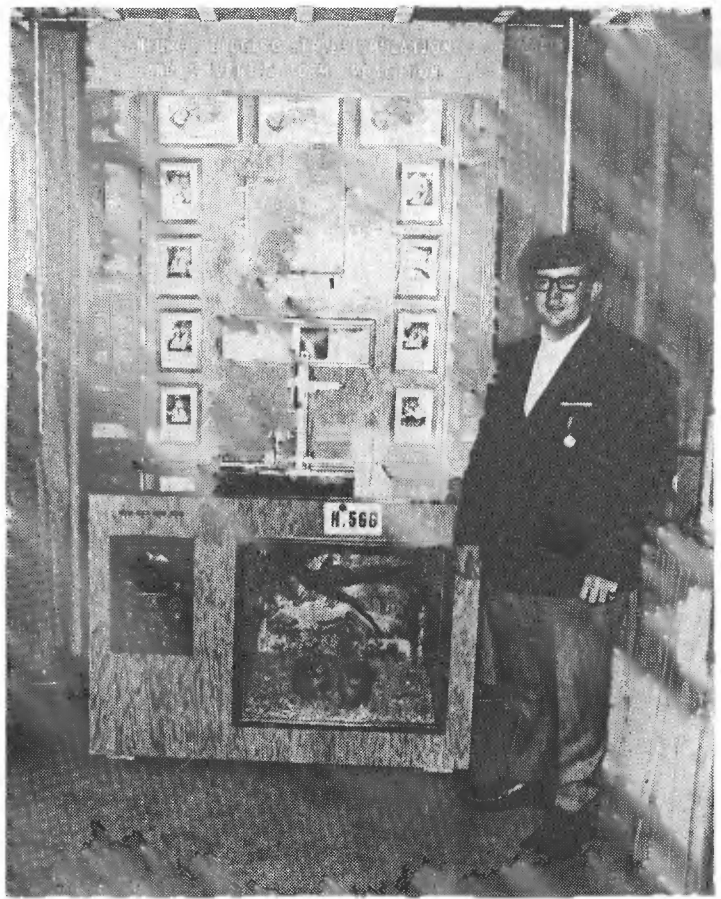
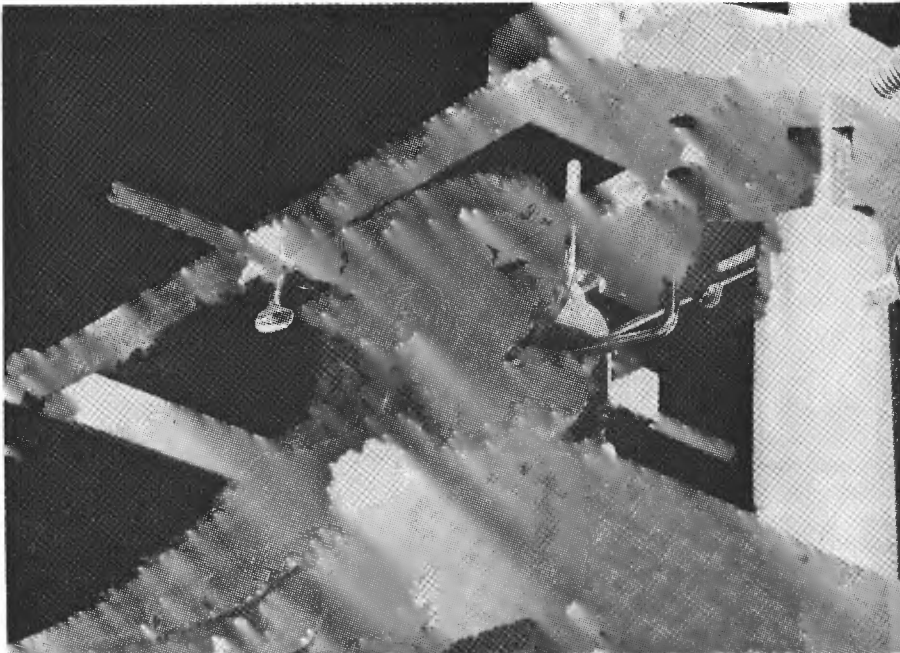
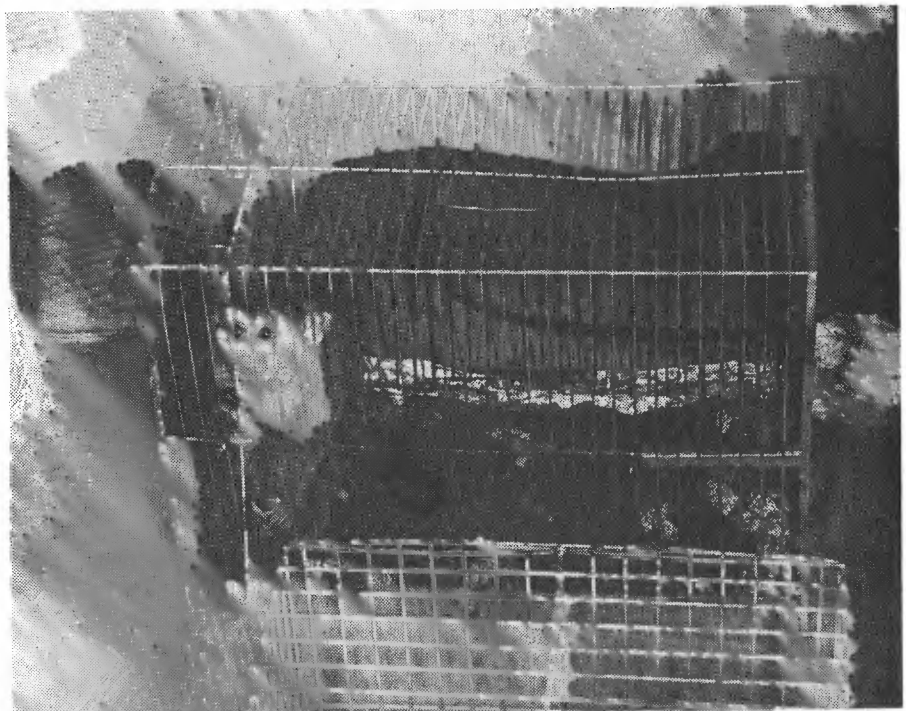


Exhibit of Hartwell T. Ashtord, high school student at the International Science Fair. Note stereotaxic instrument displayed in center of booth. Two squirrel monkeys on display are well housed and have food and water. The experimental monkeys were in small cages on the cement floor which was very cold because of the air-conditioning. There was no water in their cages.



Close-up of stereotaxic instrument with a monkey held in it. (This is not one of the science fair monkeys. The photograph is shown here to acquaint those who do not know what a stereotaxic instrument is. Deafness may result from the metal bars pressed in the ears.)



Squirrel monkey intended for surgery and electrode implantation before German movie cameras at the International Science Fair in Cobo Hall. Monkey was housed in this unsuitable cage on cold floor for three days. Note absence of water.

The Frequency of Inhumane Work in High Schools

(Continued from page 1)

The number of such student projects is shown in Table I. Out of a total of 802 biology projects exhibited at 10 science fairs, 157 or 20% involved pain or death to higher animals. This demonstrates a highly disproportionate emphasis on painful animal experimentation and suggests that some students may develop a distorted view of science.

Rachel Carson has warned, "To begin [instruction] by asking [a student] to observe artificial conditions is to create in his mind distorted conceptions and to thwart the development of his natural emotional response to the mysteries . . . of life."

Biological teaching which requires or encourages students to hurt or kill animals can be harmful emotionally, as well as morally, since the attitudes acquired may carry over to their relation not only with pets and other animals, but also, in some respects, with people. It is disquieting to contemplate a future generation of scientists so ill-versed in humane principles that they believe that in the name of "science" they may do whatever they like with animal life.

SPECTACULAR SCIENCE PROJECTS

Pressures on the students to do something new or spectacular, together with a failure to advise against unsuitable animal work have led to many amateur animal "experiments" on important current medical issues such as cancer, thalidomide, LSD, or organ transplants. Indeed, much student work follows the headlines closely. There is frequently a disproportionate emphasis and reward for the glamorous and sensational in science competitions, and, on occasion, in science teaching, as illustrated by a recent example in Columbus, Ohio. Professor Skinner's article, "Teaching Science in High School, What is Wrong?"² warns, "In relying too heavily on the attractions of science, we give the student a wrong impression of what he is to find . . ." Paul Weiss, eminent biologist, has similarly remarked that, "If science is misrepresented to the young as an array of glamorous spectacles, the seed is sown for later anti-climatic disillusionment . . ."³

WEAKENED GUIDELINES

The situation with respect to guidelines has gone from bad to worse. Although the guidelines developed by the Institute of Laboratory Animal Resources in 1960 required that "Experimental animals should not be carried over school vacation periods unless adequate housing is provided and a qualified caretaker is assigned specific duties of care and feeding," this provision was removed in the 1968 version. Also removed was the following: "All animals used must be lawfully acquired in accordance with state and local laws." The requirement that students include in written reports the methods of feeding, handling, and housing animals was dropped; and under a section dealing in supervision, the requirement that the supervisor be "trained in the experimental procedure involved" was also dropped, thus further weakening a provision which was already too weak.

FAILURE OF ADULT SUPERVISION CLAUSE

Neither the revised guidelines nor those used by Science Service for the past decade attempt to demarcate the boundaries of acceptable student work. Both sanction unlimited student experimentation. The student is relied upon to seek supervision and the supervisor to determine what student studies are desirable.

Plainly, many undesirable practices have been condoned or actively encouraged under this type of clause. Often supervision is provided by unqualified persons, is cursory, or permits work in grossly inadequate facilities. Sometimes supervisors direct the students into unsuitable animal projects. Often students perform surgical exercises or induce pathological conditions at home. Favorable newspaper attention was recently given to an 18 year old who operated on a dog's heart in his garage.⁴

One student working in his home basement with the approval of his biology teacher, paralyzed and killed mice by sealing them overnight in small wire mesh tubes. It is common for students to attempt survival surgery such as organ removal or skin transplants, sometimes without sterile operating conditions under the nominal or ostensible supervision of parents. Students deprive small animals of essential foods or water

TABLE I
NUMBER AND PERCENT OF SCIENCE FAIR
BIOLOGY PROJECTS INVOLVING PAIN
OR DEATH TO ANIMALS

FAIR AND DATE	NUMBER OF PROJECTS		Percent of Projects with Pain or Death
	In Bio.ogy*	With pain or Death to Animals†	
14th National Albuquerque May 6-11, 1963	144	32	22%
9th Annual Montgomery County, April 11, 12, 13, 1964	39	2	5%
15th National Baltimore, May 6-9 1964	98	41	42%
10th Annual Montgomery County, April 3-5, 1965	approx. 40‡	approx. 8‡	20%‡
8th Annual Frederick County, March 31 and April 1, 1967	66	6	9%
19th Annual Prince George's County, April 15-17, 1967	85	11	13%
12th Annual Montgomery County, April 15-17, 1967	39	5	13%
18th International, San Francisco, May 10- 13, 1967	150	29	19%
13th Annual Northern Virginia, March 16 and 17, 1968	26	6	23%
20th Annual Prince George's Area, March 30, 31, and April 1, 1968	115	17	15%
TOTAL	802	157	20%

Fairs were individually visited, projects viewed and records made of animal experiments, with the exception of the 14th National and 18th International Science Fairs where assessments for animal pain or death have been made on the basis of project title. This results in a tendency to underestimate as sometimes animal procedures are not explicitly described in the title although they formed part of a project.

*Biology, zoology, and medical sciences.

†Animal projects involving pain or death are listed individually in accompanying text except for ‡ where information is derived from letter to *The Washington Post*, April 15, 1965.

(for which, upon occasion, alcohol is substituted). Often pregnant animals are subjected to such a diet, the number of their dead offspring tallied, and the results exhibited with acclamation. One scientist taught two thirteen year old girls first how to induce cancer in mice and then how to kill them by breaking their necks. At a veterinarian's suggestion, a ninth grader gave mice a thousand times the daily requirement of vitamins causing blindness and death.

"Biology Experiments for High School Students" published in 1964 by the American Cancer Society and endorsed by the National Science Teachers Association, provides detailed instructions on experiments involving the production of cancer, tumors and leukemia, organ removal, and repeated starvation of mice. Many scientists actively promote painful experimentation by giving teenage students their approval, advice, equipment, and/or animals for this purpose.

Five prize winning projects in the 1966 Ford Future program conducted under the auspices of the National Science Teachers Association, entailed skin transplants in rabbits, rats and chickens. Other winning students induced muscular dystrophy and congenital malformities in rats.

SAFETY HAZARDS

Such projects entail considerable hazards. On occasion young students are the sole custodians of potentially harmful drugs or materials. In 1968, at least three science fair projects in the District of Columbia area demonstrated the harmful effects of LSD in mice. In one, a thirteen year old, working at home, gave LSD to 23 mice; five mice died from faulty injection procedures, and two more died after receiving LSD. One pregnant animal subsequently gave birth to 5 dead offspring. The animals and presumably the LSD were

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supplied by a reputable government research institution. This young student received advice, and apparently approval, from two science teachers.

At the same science fair, another project involved the induction of cancer with viruses despite the warning carried in both *The Science Teacher* and *The American Biology Teacher* in 1965 that such work may induce cancerous growths in humans. When the work is done at home, of course, the health of family and friends is also jeopardized.

The 1968 Prince George's County Science Fair (Maryland) exhibited a project in which animal tissues were irradiated and the radiation measured in a student's home with the teacher's approval. A recommendation by the safety committee to the Fair director that this project not be exhibited was refused.

Obviously the public exhibition of this type of work influences other students to undertake similar work, and it is precisely in this way that the present uncontrolled situation has developed. To be effective, guidelines should prohibit public exhibition of such work.

OVER 50,000 ANIMALS HURT

The magnitude of the problem is demonstrated by Table II which shows that out of a total of 1698 entries in all fields (i.e., biological, physical and other sciences) at 8 fairs for which detailed observations were made at each exhibition, 88 or 5% involved animal pain or death. According to Science Service records, about one million projects were exhibited at science fairs during 1967. If the 8 fairs (in the Washington, D.C. environs) are representative, in this respect, of others throughout the nation, then the total number of projects involving pain or death each year is approximately 50,000. Since more than one animal is commonly used for each project, a decidedly larger number of animals is harmed, maimed or killed by high school students each year.

Since even a professional scientist making original contributions to knowledge observes certain important restraints in his use of experimental animals, surely the novice student doing experimental exercises, should observe far more stringent rules.

Albert Schweitzer has said that "In every single instance . . . [the scientist] must consider whether it is really necessary to demand of an animal this sacrifice for man." The general judgement of science and the citizens who benefit from scientific progress, has been that such sacrifice is justified to advance scientific knowledge. It is not, however, necessary merely for the purpose of elementary education to young children. For

such elementary education involving biological *experimentation*, non-sentient forms of life such as plants and protozoa are entirely sufficient. Higher animals should be present in the classroom and studied without harming them. Beyond that, numerous advanced physiological, behavioral, genetic and other biological studies can be conducted on vertebrate animals without subjecting them to pain. And beyond that, the student who is sufficiently advanced to benefit from it can work in research institutions as an aide to a professional scientist.

PAINLESS ANIMAL WORK FOR STUDENTS

In his excellent high school text, "Experiments in Physiology" (National Press, Palo Alto, California, 1965) William McBlair observes that, "There are vast fields of inquiry to be searched where no one gets hurt." Experimental details are given for a wide range of informative physiological exercises none of which involve pain or harm to living creatures. The Animal Welfare Institute's "Humane Biology Projects" similarly offers many good ideas for experiments in school rooms or science competitions. This, like Professor McBlair's text, was expressly designed to demonstrate how biology in high schools can be taught without resort to painful animal experimentation.

Recently the Connecticut Board of Education adopted the policy that no vertebrate animal shall be "subjected to any experiment or procedure which interferes with its normal health or causes it pain or distress."⁵ This policy, first formulated by AWI a decade ago, has been in force in other areas as well and has proved acceptable and workable. The frequency of favorable comments on this code made by teachers at the AWI booths at the recent National Science Teachers Association and National Association of Biology Teachers conventions suggests that it could become widely acceptable. "This is what we want," "Why is the Committee going to work on drafting guidelines when you have them already?" are typical of many remarks teachers made. (AWI rules are given on page 8.)

*The Science Teacher*⁶ reports on the debate at the NSTA convention by briefly stating that there was an affirmative vote on the draft statement with a directive to draw up a code to guide teachers. However, part of the draft statement conflicts with the resolution, overwhelmingly approved, to formulate guidelines. The apparent conflict of these two votes can be explained since copies of the draft statement were not distributed to the assembly until after this vote was taken: thus many, if not most, teachers were without copies and voted without understanding or knowledge of the draft statement's recommendations. However, it was very clear that teachers were seeking guidelines outlining what is, and what is not, desirable in the use of animals for science teaching.

The recommendations that will emerge from NSTA should have an important effect on the standards of high school biology teaching. The increased observation and study of living creatures is essential to sound biology teaching; but let it go hand in hand with an emphasis on humane standards of animal care and treatment, and on a reverence for life.

1. Prepared ten years ago by the National Society for Medical Research, the Animal Care Panel, and the Institute of Laboratory Animal Resources, and still used by Science Service and many science competitions.
2. *Science*, Vol. 159, p. 704, 1968.
3. "Science in the Universities," *Daedalus*, p. 1211, Fall, 1964.
4. *The Galveston News*, p. 1, Section B, May 29, 1966.
5. Connecticut State Board of Education, Hartford, Series 1967-8, circular letter No. c-13, February 14, 1968.
6. *The Science Teacher*, Vol. 35, p. 21, 1968

14TH NATIONAL SCIENCE FAIR INTERNATIONAL

Albuquerque, New Mexico, May 6-11, 1963

- "Rous Sarcoma." Entry 6-Z, Age 17, Sylacauga High School, Sylacauga, Alabama.
- "Drug Induced Teratogenesis." Entry 10-M, Age 17, Sidney Lanier High School, Montgomery, Alabama.
- "Dietary Defense Against Radiation." Entry 12-M, Age 17, East Anchorage High School, Anchorage, Alaska.
- "The Effect of Hormones on the Intelligence of Rats." Entry 26-M, Age 17, Red Bluff Union High School, Red Bluff, California.
- "Importance of Manganese in Development of Young." Entry 32-M, Age 18, Folsom Senior High School, Folsom, California.
- "Gaseous Cause of Phenomenon Termed Nitrogen Narcosis and the Effects of Traumatic Aero Embolism." Entry 60-M, Age 18, Stranahan Senior High School, Fort Lauderdale, Florida.
- "Can Epilepsy be Artificially Induced?" Entry 74-M, Age 17, Boise High School, Boise, Idaho.

TABLE II
NUMBER AND PERCENT OF SCIENCE FAIR
PROJECTS INVOLVING PAIN OR
DEATH TO ANIMALS

FAIR AND DATE	NUMBER OF PROJECTS		Percent of Projects with Pain or Death
	Total, All Fields*	With pain or Death to Animals†	
9th Annual Montgomery County, April 11, 12, 13, 1964	108	2	2%
15th National Science Fair, Baltimore, May 6-9, 1964	420	41	10%
8th Annual Frederick County, March 31, April 1, 1967	172	6	3.5%
19th Annual Prince George's County, April 15-17, 1967	405	11	3%
12th Annual Montgomery County, Senior Division, April 15-17, 1967	64	5	7.8%
Arlington County March 16, 17, 1968	unknown‡	4‡	unknown‡
13th Annual Northern Vir- ginia, March 16 and 17, 1968	105	6	6.6%
20th Annual Prince George's Area, March 30 and 31 and April 1, 1968	424	17	4.0%
TOTAL	1698	88	5%

*Included are physical, biological, and other sciences.
†Animal projects involving pain or death are listed individually in accompanying text.
‡Not included in total.

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"Subcutaneous Induction of Malignant Melanoma in the Syrian Hamster with Cell-Free Extracts." Entry 91-M, Age 17, New Haven High School, New Haven, Indiana.

"Abnormal Embryonic Development Relative to Temperature and Oxygen Consumption." Entry 92-Z, Age 17, Oliver P. Morton High School, Hammond, Indiana.

"Effects of Estrogen and Other Hormones in Relation to Cancer." Entry 93-M, Age 15, Oliver P. Morton High School, Hammond, Indiana.

"Technique of Extra Corporeal Circulation." Entry 101-M, Age 15, John Adams High School, South Bend, Indiana.

"Effects of Blood Serum from Irradiated Guinea Pigs on Tissue Cultures." Entry 150-M, Age 16, Frederick High School, Frederick, Maryland.

"Investigation of Hypoxia-Induced Fetal Death and Congenital Anomalies in Mice." Entry 154-M, Age 17, Ralph C. Mahar Regional High School, Orange, Massachusetts.

"Analysis of Embryonic Regeneration." Entry 158-Z, Age 18, Charlton High School, Charlton, Massachusetts.

"Oxygen Deficiency in the Perinatal Period." Entry 166-M, Age 16, Saint Michaels School, Flint, Michigan.

"Effect of Gravity on Mice." Entry 168-Z, Age 17, Ottawa Hills High School, Grand Rapids, Michigan.

"Effects of Drugs and Surgery on Respiratory and Heart Counts." Entry 175-M, Age 19, Bad Axe High School, Bad Axe, Michigan.

"Effects of Traumatic Shock Conditioning on the Phagocytic Activity of the Reticuloendothelial System." Entry 180-M, Age 18, Greenwood High School, Greenwood, Mississippi.

"Experimental Carcinogenic Studies with Digestive Juices." Entry 212-M, Age 17, Hopewell Township Central High School, Pennington, New Jersey.

"Space Age Hormone-Erythropoietin." Entry 219-M, Age 15, Lovington High School, Lovington, New Mexico.

"Cancer Chemotherapy." Entry 228-M, Age 17, St. Vincent Ferrer High School, New York, New York.

"Radiation—Protective Effects on RNA." Entry 232-M, Age 16, New Dorp High School, New Dorp, New York.

"Effects of Hormones on Melanin." Entry 260-M, Millersburg-West Holmes High School, Millersburg, Ohio.

"Study of Hypothermia in Fish." Entry 268-Z, Age 17, Durant High School, Durant, Oklahoma.

"Bone Marrow Transplantation and Recovery." Entry 327-M, Age 16, Dyersburg High School, Dyersburg, Tennessee.

"Dietary Control of Ionizing Radiation." Entry 337-M, Age 17, Dimmitt High School, Dimmitt, Texas.

"Effects of Bile Duct Ligation on Serum Proteins as Shown by Zone Electrophoresis." Entry 340-M, Age 16, Falfurrias High School, Falfurrias, Texas.

"Effects of Cooling on Radiation Damage to Living Cells." Entry 342-M, Age 18, Bryan Adams High School, Dallas, Texas.

"Comparative Evaluations of the Toxicities of Anesthetics." Entry 364-M, Age 17, Corsicana High School, Corsicana, Texas.

"Effects of Radiation on the Transmission of Nerve Impulses." Entry 365-M, Age 17, Temple High School, Temple, Texas.

"Spinal Deformities in Guppies—Thyroxin as a Factor." Entry 389-M, Age 17, William Fleming High School, Roanoke, Virginia.

"Thalidomide." Entry 402-M, Age 18, Vinson High School, Huntington, West Virginia.

9TH ANNUAL MONTGOMERY COUNTY SCIENCE FAIR

Maryland, April 11, 12, and 13, 1964

"Does Cigarette Smoke Affect Mice?" First prize, Entry 20-18, Einstein High School.

"Effect of Electrical Stimulus on Frogs." Honorable mention, Entry 20-11, Springbrook High School.

15TH NATIONAL SCIENCE FAIR

Baltimore, Maryland, May 6-9, 1964

"To Live or to Die." Animals centrifuged. Entry 16-M, Age 16, Jonesboro High School, Jonesboro, Arkansas.

"Influence of Estrogen and Other Hormones on Experimental Mammary Cancer Induced by Polynuclear Hydrocarbon." Rats used. Entry 85-M, Age 16, Oliver P. Morton High School, Hammond, Indiana.

"Dye as a Therapeutic Agent." Entry 420-M, Age 17, Manchester Memorial High School, Manchester, New Hampshire.

"Effect of Serotonin Against Gamma Radiation." Entry 169-M, Age 18, Ottawa Hills High School, Grand Rapids, Michigan.

"Crippling Effects of Caffeine Alkaloid." Mice used. Entry 174-M, Age 16, Loretto Catholic Central High School, Sault Ste. Marie, Michigan.

"Histogenesis of Normal and Cancerous Breast Tissue." Entry 194-M, Age 17, Christian Brothers College High School, Clayton, St. Louis, Missouri.

"Behavioral Effects of Offspring from the 25th Generation of X-Irradiated Mice." Entry 212-M, Age 18, Pascack Valley High School, Hillsdale, New Jersey.

"Sleep—A Habit? Rest—Necessary!" In order to keep rats awake for extended periods they were revolved for over three months in a drum. Some died. Entry 216-M, Age 17, Albuquerque, New Mexico.

"Effect of Splenectomy on the Survival of Skin Homografts in White Rats." Twenty-eight skin grafts done on rats, some of whom also had spleens removed. Entry 227-M, Age 15, Bronx High School of Science, New York.

"Therapeutic Radiation Treatment after Induction of Friend Virus in Mice." Entry 338-M, Age 17, Dyersburg High School, Dyersburg, Tennessee.

"Gratification and Reinforcement as Produced in Electrical Hypothalamic Stimulation." Non-sterile operation—rusty scissors—electrodes implanted in rats' brains. Animals that survived 11 days post-operatively had their brains electrically stimulated. Entry 343-M, Age 16, East High School, Memphis, Tennessee.

"Skin Transplants." Entry 362-M, Age 16, Cy-Fair High School, Cypress, Houston, Texas.

"Effects of Inhaling Tobacco on White Mice." Entry 366-M, Age 18, Roosevelt Rural High School, Lubbock, Texas.

"Growth and Treatment of Cancer in Swiss Mice." Entry 375-M, Age 17, Robert E. Lee High School, San Antonio, Texas.

"Synthesis and Pharmacology of Tetrahydrophthalimides." Entry 385-M, Age 17, Skyline Senior High School, Salt Lake City, Utah.

"Effects of High 'G' on Living Things." Rats centrifuged continuously for two weeks. Entry 404-M, Age 16, North Thurston High School, Lacey, Washington.

"Rous Sarcoma: Preparation of Heat Killed Vaccine and Anti-Serum." Entry 3-M, Age 18, Sylacauga High School, Sylacauga, Alabama.

"Study of Influence of Vitamin B Complex and Vitamin K on Irradiated Tissue." Entry 8-M, Age 18, East Anchorage High School, Anchorage, Alaska.

"Hibernation vs. Hypothermia." Entry 11-M, Age 18, North Phoenix High School, Phoenix, Arizona.

"Increasing Resistance to Radiation." Entry 24-M, Age 18, Grace M. Davis High School, Modesta, California.

"Effects of Acceleration on Mice." Entry 38-E, Age 16, Seymour Street High School, St. Catharines, Ontario.

"Anti-neoplastic Agent—Tested—in Vivo and in Vitro." Entry 46-M, Age 16, John Dickinson High School, Wilmington, Delaware.

"Eight-hour Intraperitoneal Chemotherapy of Rat Cancer." Entry 53-M, Age 16, Robert E. Lee High School, Jacksonville, Florida.

"Does Mother Factor During Infancy Affect Growth and Behavior in Maturity?" Entry 61-M, Age 15, Fulton High School, Atlanta, Georgia.

"Sickle Cell Anemia and Implantation of Blood-Forming Tissue in Mice." Entry 64-M, Age 18, David T. Howard High School, Atlanta, Georgia.

"Electrical Conductivity in Malignant and Non-Malignant Tissues." Entry 78-M, Age 17, Auburn High School, Auburn, Indiana.

"Induction of Malignant Melanoma and Melanin with Cell Free Extract." Entry 84-M, Age 18, New Haven High School, New Haven, Indiana.

"MEA-A Protection Against Radiation Damages?" Entry 90-M, Age 18, New Albany Senior High School, New Albany, Indiana.

"Possible Transmission of Breast Tumors Through the Male." Entry 91-M, Age 17, Southwestern High School, Lafayette, Indiana.

"Electro-Anesthesia in Small Animals." Entry 105-M, Age 18, St. Edmond High School, Fort Dodge, Iowa.

"Psychological Effects of Athermal Electromagnetic Irradiation on White Mice." Entry 115-M, Age 18, Great Bend High School, Great Bend, Kansas.

"Effect of an Increased Level of Brain Serotonin on the Learning Ability of White Mice." Entry 137-M, Age 15, Natchitoches High School, Natchitoches, Louisiana.

"Bacterial Protection Against Radiation." Entry 148-M, Age 17, Frederick High School, Frederick, Maryland.

"Oxygen Deficiency in the Perinatal Period." Entry 167-M, Age 17, St. Michael High School, Flint, Michigan.

"Virus is a Link to Cancer." Entry 209-M, Age 16, Immaculate Conception High School, Lodi, New Jersey.

"Effects of Drugs Under Hypothermia." Entry 261-M, Age 17, Wahpeton High School, Wahpeton, North Dakota.

"Effects of Specific Drugs on Melanin." Entry 263-M, Age 16, West Holmes High School, Millersburg, Ohio.

"Effect of Deuterium Oxide on ELD Ascites Tumors." Entry 275-M, Age 18, College High School, Bartlesville, Oklahoma.

"Laboratory Induction of Vesical Calculi in the Mus Norvegicus Albinus." Entry 318-M, Age 17, A. C. Flora High School, Columbia, South Carolina.

"Production and Testing of Avian Bronchitis Vaccine." Entry 331-M, Age 16, Woodbury Central Community School, Merville, Iowa.

"Mouse in a Closed Ecological Environment." Entry 402-M, Age 15, Columbia High School, Richland, Washington.

10TH ANNUAL MONTGOMERY COUNTY SCIENCE FAIR

Maryland, April 3, 4, and 5, 1965

Electrical shocks administered to animals from floor of cage. Bethesda Chevy Chase High School.

Effect of Hormones on mice. Bethesda Chevy Chase High School.

Removal of Pancreas in Rats. Bethesda Chevy Chase High School.

Skin Grafts on Mice.

Exposure of Animals to Heated Wires.

Effect of Cigarette Smoke on Mice.

Vitamin Deficiency in Mice. Our Lady of Good Counsel High School.

Removing Testes from Rats. Bethesda Chevy Chase High School.

8TH ANNUAL FREDERICK COUNTY SCIENCE FAIR

Maryland, March 31 and April 1, 1967

"Can a Mouse be Drunk?" Mice given inadequate food and alcohol; all dead within a month. Award: "Superior." Entry JB-18, Grade 7, West Frederick High School.

"The Effects of Slum Living." Mice kept in overcrowded, insanitary conditions; inadequate food and bedding. Honorable mention. Entry SB-10, Grade 10, Middletown High School.

"Necessary Nutrient." Mice given inadequate diets. Entry JB-16, Grade 8, St. John's High School.

"Puff Away your Appetite." Mice exposed to cigarette smoke. Entry JB-28, Grade 7, St. John's High School.

"Diet Deficiencies in Mice." Entry JB-29, Grade 7, Linganore High School.

"Death in Our Air." Charcoal sprayed into nostrils of mice. Entry JB-38, Grade 8, Middletown High School.

PRINCE GEORGE'S COUNTY 19TH ANNUAL FAIR Maryland, April 15-17, 1967

"Orbiting a Lab Mouse." Mouse launched in rocket. Award: "Excellence." Entry J 821, Grade 8, Douglass Junior High School.

"Whisky and White Mice; Do They Mix?" Pregnant mice fed alcohol and death rate of babies recorded. In final three litters, only two babies out of nineteen were born alive. Entry S 1110, Grade 12, Du Val Senior High School.

"Lack of Vitamin D in Mice." Mice became bowlegged and hunch-backed. Entry S 1117, Grade 11, La Reine High School.

"The Uptake of Radio Isotopes (sic) Mice." Mice injected then killed. Entry S 0821, St. Mary's Catholic School.

"Mouse Menu." Deficient diet. Entry J 1100, Francis Scott Key Junior High School.

"Can Fish Live in Polluted Water?" Entry J 1115, Mary M. Bethune School.

"Distribution of Radioactive Iron." Entry S 0805, Crossland Senior High School.

"The Effects of Thiourea on Chicks." Chemical injected into chick embryos causing abnormally small chicks to be hatched. Entry S 0815.

"Crowding, Cortisone, and Death." Entry S 1103, Northwestern Senior High School.

"Malaria vs. the Blood Brain Barrier." Entry S 1118. Chickens used. La Reine High School.

"Teratogenic Effects of RNA." i.e., production of monster fetuses. Entry S 0822, Calvert County Junior-Senior High School.

12TH ANNUAL MONTGOMERY COUNTY SCIENCE FAIR

Maryland, April 15-17, 1967

"Abdominal Surgical Techniques in Mice." Part of liver removed, skin sutured, and animals allowed to recover consciousness. No experimental design—purely technical display. Second prize. Entry B 31, Grade 10, Springbrook High School.

"The Effects of Acceleration on Mice." Launched in rocket. Entry B 15, Grade 11, Good Counsel High School.

"Induced Immunity to Poison Ivy Toxin." Mouse skin cut and poison ivy oil applied. Entry B 28, Grade 12, Springbrook High School.

"Are There any Changes in the Behavior of Mice who have been Confined as Compared to Mice who have not been Confined?" Mice inadequately housed in very small cages. Entry B-39, Grade 12, Springbrook High School.

"Induction of An Enzyme." Rats injected and killed by decapitation. Entry B 1, Grade 12, Bethesda Chevy Chase High School.

18TH INTERNATIONAL SCIENCE FAIR

San Francisco, California, May 10-13, 1967

"Exogenous Gestation." Unborn rats removed from mothers' bodies and kept for several hours in mechanical womb until they died. Second prize. Entry 2-M, Age 16, A. H. Parker High School, Birmingham, Alabama.

"Controlling the Psychological and Physical Effects of the Magnitude and Direction of Acceleration on Mice." Entry 8-M, Age 18, Sylacauga High School, Sylacauga, Alabama.

"Effects of Hyperparathyroid Condition on Prenatal Development." Entry 26-M, Age 18, Red Bluff High School, Red Bluff, California.

"Rate of Glucose Absorption in Diabetic Rats." Entry 31-M, Age 16, St. Francis High School, Sacramento, California.

"A Study of S-91 Melanoma Tumor in Mice—An Application of Holography to Biological Research." Entry 53-M, Age 17, Sidwell Friends School, Washington, D. C.

"Stress Thyroid Activity." Entry 82-M, Age 16, Edgewood High School, Ellettsville, Indiana.

"Effect of Atropine and UML on Serotonin Hypnosis on White Mice." Entry 104-M, Age 17, Regis High School, Cedar Rapids, Iowa.

"Dopamine: A Radio Protective." Entry 120-M, Age 17, Louisville Country Day School, Louisville, Kentucky.

"Attempts to Induce Atherotic Lesions," i.e., brain lesions. Entry 123-M, Age 16, James A. Cawood High School, Harlan, Kentucky.

"Radiation Resistive Processes." Entry 126-Z, Age 17, St. Anthony High School, Baton Rouge, Louisiana.

"Skin Transplants." Entry 155-M, Age 18, Bad Axe High School, Bad Axe, Michigan.

"Electrophoretic Investigation of Protein Levels in Serum from Rats Injected with Babesia Rodhaini." Entry 162-M, Age 18, Holt High School, Holt, Michigan.

"Effects of Thyroid Inhibited Drugs on Chickens." Entry 165-M, Age 15, Houghton High School, Houghton, Michigan.

"Viruses: Their Role in the Production of Cancer." Entry 181-M, Age 17, Coahoma County High School, Clarksdale, Mississippi.

"Vitamin D: Too Much or Too Little of a Good Thing." Entry 190-M, Age 18, Parkway Senior High School, Chesterfield, Missouri.

"Electrical Anesthesia." Entry 208-M, Age 17, Raritan Township High School, Hazlet, New Jersey.

"Damaging Effects of a Sleep-Inducing Drug." Entry 212-M, Age 17, Hamilton High School, East Trenton, New Jersey.

"Effect of Tridione on Memory Transfer by Injection of RNA Extracted from Trained Rats." Entry 214-M, Age 18, Manzano High School, Albuquerque, New Mexico.

"An Intracorporeal Extraventricular Cardiac Prosthesis." Entry 225-M, Age 17, Bronx High School of Science, New York.

"Fetal Anomalies Induced by Extra-natal Factors." Entry 263-M, Age 17, Meadowbrook High School, Byesville, Ohio.

"A Study of Zinc-65 Distribution in Rats." Entry 272-M, Age 17, College High School, Bartlesville, Oklahoma.

"Growth Inhibiting Effect of an Adrenal Cortical Hormone." Entry 290-M, Age 18, Keystone Joint High School, Knox, Pennsylvania.

"Maternal and Congenital Anomalies Attributable to Parental Vitamin A." Entry 294-M, Age 17, Donegal High School, Mount Joy, Pennsylvania.

"Induced Changes in Heart Beat Shown by Electrocardiography." Entry 310-M, Age 18, Chesterfield High School, Chesterfield, South Carolina.

"Fluorescence of Cancer Cells." Entry 314-M, Age 18, Spartanburg High School, Spartanburg, South Carolina.

"Effects of Aramine and Other Drugs on the Low Temperature Survival of Mice." Entry 336-M, Age 18, Pampa High School, Pampa, Texas.

"Carcinogenesis." Entry 344-M, Age 18, Harlingen High School, Harlingen, Texas.

"Effect on Chicks of Metabolites of the Fungus Fusarium Moniliforme Sheld Resulting from Its Growth on Peanuts." Entry 360-M, Age 17, Central High School, San Angelo, Texas.

"Use of Testosterone in Pregnant Rabbits." Entry 428-M, Age 15, Ankara College, Ankara, Turkey.

ARLINGTON COUNTY SCIENCE FAIR

Virginia, March 16 and 17, 1968

"Effect of LSD on Mice." Twenty-three mice given LSD; five died from faulty injection procedure. Another two died subsequently. A pregnant mouse given LSD gave birth to five dead offspring. Work done at home. Entry 811, Grade 8, Gunston School.

"Malignant Tumors." Studied role of viruses in cancer. Three chickens used. Cancer induced. Entry 10 # 1, Grade 10, T. C. Williams High School.

"Laboratory Study of Physiological Phenomena." Injected mice with potassium citrate, Empirin, codeine, serum, and acetyl salicylic acid. One mouse killed. Entry 12 # 1, Grade 12, Washington Lee High School.

An exhibit of hamsters with cage approximately 7 x 7 x 7 inches containing one adult hamster and about eight, two-inch long babies. Floor space entirely covered by babies and did not allow standing room for the mother. No food or water.

13TH ANNUAL NORTHERN VIRGINIA SCIENCE FAIR, SENIOR DIVISION

Fairfax-Prince William Section, Virginia, March 16 and 17, 1968

"The Effects of Stresses and Confinement on the Behavior Patterns of White Mice." Death or paralysis caused by complete restraint of mice overnight in wire mesh holder. Lacerations caused by struggling mice kept at 8° C. Entry 10-Z-5, Grade 10, George C. Marshall High School.

"Influence of LSD-25 on Mice and Their Offspring, Using a T-maze as a Standard Psychological Test." Pregnant mice given LSD. Work done "on bedroom floor." Entry 11-H-5, Grade 11.

"Use of Hormones to Increase Survival Rate of Offspring in Experimental Animals." Pregnant rabbits given hormones and number of dead offspring recorded. Entry 11-2-4, Grades 10 and 11, Mount Vernon School.

"Is Inhalation of Tobacco Smoke Harmful to Rats?" Six rats exposed to cigarette smoke. Entry 10-Z-4, Grade 10, Brentsville District School.

"Psychological Effects of Barbitol, Elavil and Caffeine on Chickens." Entry 11-H-3, Grade 11 plus 1.

"Determination of Glycogen Analyzation Histochemically and Biochemically in the Heart and Liver of Mice After Normal Starvation and Dextro-amphetamine Starvation." Entry 12-H-1, Grade 12.

PRINCE GEORGE'S AREA 20TH ANNUAL SCIENCE FAIR

Maryland, March 30, 31, and April 1, 1968

"The Endocrine Glands and Surgery." Survival surgery on rats; two died post-operatively. Entry J0826, Grade 9, Francis Scott Key Junior High School.

"Underwater Living." Mice kept in chamber underwater, one drowned. Entry J1104, Grade 9, Eugene Burroughs Junior High School.

"Underwater Environment to a Mouse." Entry S1110.

"Effects of Parachute Descent on Lab Mice." Entry J0835, Douglas Junior-Senior High School.

"The Effects of Excess Vitamins." Mice became blind and died. Entry J0828, Grade 9, Roger B. Taney Junior High School.

"Protein Analysis of Albino Rats." Rats on inadequate diet. Entry J0820, Nicholas Orem Junior High School.

"Heart Stimulants and Depressants." Mice given drugs to affect heart. Entry S1115, Grade 12, Lackey Junior-Senior High School.

"Can Fish Live in Polluted Water?" Result, they can't; fish killed. Entry J1124, Thomas Pullen Junior High School.

"Water Pollution." Goldfish killed with detergent. Entry S1117, Laurel Senior High School.

"Crowding, Cortisone, and Death." Drugs and crowding killed about 75 guppies. Entry S1125, Northwestern Senior High School.

"The Effects of Vodka on Rats." Entry J0806, Grade 9, Charles Carrol Junior High School.

"How Alcohol Affects Memory." Mice given alcohol. Entry J0821, Grade 8, Belair Junior High School.

"P32: Frog versus Mouse." After killing animals, student took radioactive animal tissues home, constituting danger to self and family. Entry S1106.

"Do Tranquilizers Affect the Mind?" Shortened, discolored teeth resulted from treatment mice received. Entry J0831, Hyattsville Junior High School.

"Drugs and Addiction." Various drugs given to mice. Entry J0832, Grade 9, Kent Junior High School.

"Positive versus Negative Reinforcement." Electric shocks given to mice. Entry S0818, Grade 12, Potomac Senior High School. Drug similar to LSD given to hamsters. Entry J0827, Grade 9.

Animal Welfare Institute
Rules Governing Treatment of
Animals by High School
Biology Students

1. Animals being observed by students must always be maintained in the maximum possible condition of health, comfort and well-being.
2. No vertebrate animal used for primary or secondary school teaching may be subjected to any experiment or procedure which interferes with its normal health or causes it pain or distress.

"ANIMALS AND THEIR LEGAL RIGHTS"
TO BE PUBLISHED BY AWI IN JULY

Readers of the Information Report will recall the discovery by Emily Stewart Leavitt that the first anti-cruelty law (1641) was American. The Massachusetts Bay Colony required humane treatment of animals before any nation did so. Before she could complete all the research and writing for "Animals and Their Legal Rights" Mrs. Leavitt died. Chapters were contributed by the Animal Health Division of the United States Department of Agriculture; Lewis Sharpley, President of the Dog Writers Association of America; Pearl Twyne, President of the American Horse Protection Association; and Frederick A. Ulmer, Jr., Curator of Mammals, Philadelphia Zoological Garden. The fourteen chapters and appendix provide a combination of reference material, including the full text of important laws, and the history of their enactment. No comparable book exists at present, and the need for such information is great.

Persons wishing to order copies of "Animals and Their Legal Rights" or other AWI publications and films, a selected list of which appears below, may use the order form. Additional information will be supplied on request.

A SELECTION OF MATERIALS FROM THE ANIMAL WELFARE INSTITUTE

- ANIMALS AND THEIR LEGAL RIGHTS**
By Emily Leavitt and other authors. Summary and history of laws affecting the welfare of animals in the United States. Animal Welfare Institute. 214 pages. One copy free upon request to libraries and humane societies. To others \$1.00
- ANIMAL EXPRESSIONS**
A photographic footnote to Charles Darwin's *Expression of the Emotions in Man and Animals*. Foreword by F. J. Mulhern, D.V.M. 54 pages. 106 Illustrations. Animal Welfare Institute. Free on request to veterinarians and persons employed by research institutions in the management of animal colonies and care of animals. To others. 75¢
- STUDYING OUR FELLOW MAMMALS**
By Ernest P. Walker. 172 pages, 152 illustrations. Chapters include: Conservation, Behavior, Intelligence, Form: Anatomy and Physiology, Ancestry, Care of Captive Animals, Photographing Animals, Classification, and Animal Distribution. Animal Welfare Institute. One copy free upon request to teachers and libraries. To others \$1.00
- HUMANE BIOLOGY PROJECTS**
Animal Welfare Institute, 14 contributors, 41 pages, illustrated. Designed for use in secondary schools. One copy free upon request to teachers, librarians, humane societies; to others 35¢
- FIRST AID AND CARE OF SMALL ANIMALS**
By Ernest P. Walker. Designed for use in primary and secondary schools. 46 pages, illustrated. Animal Welfare Institute. One copy free upon request to teachers, librarians, scout leaders, humane societies; to others 35¢
- RULES GOVERNING TREATMENT OF ANIMALS BY HIGH SCHOOL BIOLOGY STUDENTS**
Animal Welfare Institute Free
- STATEMENT ON ANIMALS IN SECONDARY SCHOOLS**
By Dr. W. W. Armistead, Dean, College of Veterinary Medicine, Michigan State University. 1 page Free

- THE STATUS OF ANIMALS IN THE CHRISTIAN RELIGION**
By Major C. W. Hume, O.B.E., M.C., B.Sc., London. Illustrated by Fougasse. 100 pages. UFAW. \$1.25
- LABORATORY DOGS**
16 mm. sound film showing humane care and housing of dogs in an experimental surgery laboratory. Produced by Crawley Films. For one week's rental, \$3, purchase \$50.

**THE FOLLOWING ARE AVAILABLE ONLY
TO PERSONS EMPLOYED IN
SCIENTIFIC INSTITUTIONS**

- COMFORTABLE QUARTERS FOR LABORATORY ANIMALS**
Illustrated manual, designed for those planning to build, remodel or re-equip animal quarters. Animal Welfare Institute. One copy free on request to scientific institutions or architects. 1966 edition.
- AN INTRODUCTION TO THE ANESTHESIA OF LABORATORY ANIMALS**
By Phyllis Croft, Ph.D., M.R.C.V.S. 32 pages. UFAW 50¢
- HANDLING LABORATORY ANIMALS**
16 mm. sound film showing proper handling of 12 common species of laboratory animals. Produced by MacQueen Films with cooperation of National Institute for Medical Research, London, England. One week's rental \$3, purchase \$75.
- BASIC CARE OF EXPERIMENTAL ANIMALS**
Fourth edition now in preparation. Free on request to veterinarians and persons employed in scientific institutions where animals are used.

Administrators are invited to place orders for each person in the institution to whom they wish to give a free copy. Professors in colleges of medicine, veterinary medicine, pharmacy, and agriculture, who are teaching proper care of laboratory animals to their classes, will be sent a free copy for each student on request. Please indicate the number needed.

ANIMAL WELFARE INSTITUTE, P.O. Box 3492, Grand Central Station, New York, N.Y., 10017

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Note: Teachers please indicate grade level.

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July, August, September

Vol. 17, No. 3

FEDERAL HUMANE SLAUGHTER ACT: TENTH ANNIVERSARY

The National Provisioner, trade journal of the meat packing industry, expressed editorial satisfaction in a recent issue over the first ten years of humane slaughter. "Humane slaughter—once a subject of bitter dissension—has been United States law for a decade," it states, and it urged packers to demand state humane slaughter laws to complement the federal statute. "State associations of packers have taken the lead to obtain the legislation in several states," said *The Provisioner*, "Others should do this in the 27 states that do not have humane slaughter laws. It's good business."

Back in 1955 when Hubert H. Humphrey introduced the first federal bill to require humane slaughter of meat animals, it was a different story. The big packers claimed they were "studying" humane slaughter and that mandatory law on the subject would put many in the industry out of business. Under a Republican Administration it seemed as if the bill could not be passed. Secretary of Agriculture Ezra Benson sympathized so strongly with the views the packers held at that time that expressions of opinion by the American Meat Institute and the Secretary were difficult to distinguish from each other.

The humane Humphrey proposal got powerful support in the House Agriculture Committee after Congressman W. R. Poage (D., Tex.), Chairman of the Livestock and Feed Grains Subcommittee took its members to visit slaughterhouses. To the surprise of many seasoned observers, the House passed mandatory humane slaughter legislation, and the American Meat Institute had to redouble its efforts to defeat the bill in the Senate. The packing lobby did succeed in committee, and the House-passed bill was reduced to a mere "study" bill, but Senator Humphrey supported by seventeen co-sponsors went into battle on the Senate floor, and in an almost unheard of success reversed the committee on the floor.

Senator Humphrey had to remain on the Senate floor almost continuously for seven hours battling destructive amendments, and when he emerged victorious with only a single one of the weakening amendments (the Case-Javits amendment to exempt pre-slaughter handling of kosher killed animals), the lobbyist for the American Meat Institute, Aled P. Davies, came down to the Senate Lobby in the spirit of a defeated tennis player jumping the net to shake hands with the winner. "We threw the book at you," he said. Nor had "the book" been quite finished.

The packers were given two years to get into compliance, and on June 11, 1960 just as the law was about to go into effect, *The National Provisioner* warned that the Army, the biggest buyer of meat for the U.S. Government had "made a cavity if not a hole in the teeth of the Federal Humane Slaughter Act." Senator Humphrey went back to the defense of the law, again successfully. He said on the Senate floor:

... there is a law which even the U.S. Army does not have the authority or power to abrogate. That law was passed by the Senate, by the House of Representatives, and signed by the President. I am the author of the Humane Slaughter Act, and I intend to see that the act is fulfilled.

The Act will go into effect July 1. We allowed 2 years' time for the slaughterhouses to get themselves into conformity and compliance with the Act.

USDA PUBLISHES LIST OF RESEARCH FACILITIES REGISTERED UNDER THE LABORATORY ANIMAL WELFARE ACT

A listing of 533 research facilities registered by the United States Department of Agriculture under the Laboratory Animal Welfare Act, P.L. 89-544, was published in the August 31, 1968 issue of *The Federal Register*. The term "research facility" covers a broad range from giant universities with campuses throughout the state ("The Regents of the University of California" appears as a single registrant on the list) down to an animal hospital in Fort Pierce, Florida, and including such unexpected listings as Campbell Soup Company Research Institute; Arthur D. Little, Inc.; and Revlon Research Center. All of the big pharmaceutical companies, the universities that have medical or veterinary medical schools, the big research institutes and hospitals are included as are a number of state health departments.

The many research facilities of the various departments and agencies of the federal government must adhere to the standards of animal care and housing established by USDA, but they are not registered under the Act. Among those actually registered, over 1,500 inspection sites are included, and available statistics would indicate that the majority of dogs, cats, hamsters, guinea pigs, rabbits, monkeys and apes used for research and testing in the United States now have the benefit of these humane regulations which are being so ably, fairly and effectively enforced by USDA's Animal Health Division. The Division comprises approximately 800 veterinarians throughout the United States assisted by technical and secretarial staff.

Dogs and cats sold to registered institutions by animal dealers licensed under the law must be identified and records maintained so that a missing animal can be traced by law enforcement officials. This major deterrent to pet theft will be further strengthened when all states have laws complementing the Laboratory Animal Welfare Act.

... It requires no more bookkeeping or intelligence in the procurement section of the Army to procure meat products according to law than it does to avoid the law. It required a good deal more time to figure out how to evade the law and avoid its impact. I suggest that the Department of the Army get in step at once. It is out of step. I propose that those in charge of this activity read the act and comply with its provisions.

... I trust these remarks will find their way into the hands of the Secretary of the Army, which will save my writing a letter to him. I trust that Mr. Courtney Johnson, the Assistant Secretary in Charge of Logistics, will read what I have said carefully, and if he does not, I intend to call upon the Department of Justice to enforce the law. The law is there, and it needs enforcement. We have plenty of attorneys who can do so. There is an office of the U.S. Attorney in Chicago that can take care of the matter promptly. The law will be enforced.

On June 14th, Senator Humphrey received a statement from the Army that it would comply in full with the provisions of the Humane Slaughter Act.

WILD HORSE RANGE

ESTABLISHED BY SECRETARY UDALL

A 31,000-acre wild horse and wildlife range in the Pryor Mountains along the Montana-Wyoming border has been established by Secretary of the Interior, Stewart L. Udall. The announcement was made September 12, 1968, and Senate Majority Leader, Mike Mansfield of Montana, sponsor of the Wild Horse Act of 1959 outlawing cruel motorized pursuit of these animals or poisoning of their water holes on land belonging to the United States, hailed the new move as "good news because it will mean more feed and sustenance for the horses and other wildlife as well."

The action by Secretary Udall prevented a proposed round up of the wild horses by the Bureau of Land Management, the agency which also fought the Wild Horse Act in 1959. A highly effective television documentary made by Hope Ryden for ABC-TV showing the wild horses and giving interviews with BLM officials and with local residents who sought protection for the wild horses, brought widespread public attention to the problem, as did an article in Newsweek, May 13, 1968.

A committee composed of representatives of wild horse organizations, humane societies, wildlife specialists and others has been appointed, and future decisions on the wild horses will be based on consideration of the committee recommendations. Mrs. Velma Johnston of Nevada, who began the long fight to protect the wild horses, and Mrs. Pearl Twyne, President of the American Horse Protection will serve on the committee.

PROGRESS ON THE ENDANGERED SPECIES BILL

Senate hearings on S. 2984 and H.R. 11618, the Endangered Species Bill, were held under the chairmanship of Senator Daniel B. Brewster (D., Md.) in the Subcommittee on Merchant Marine and Fisheries of the Senate Commerce Committee, July 24, 1968. The bill, which would empower the Secretary of the Interior to prohibit entry into the United States or transportation in interstate commerce of species which are in danger of becoming extinct, was passed by the House of Representatives on August first.

The bill was strongly supported by the Department of the Interior and conservation organizations at the 1967 House hearings. (see Information Report, Vol. 17, No. 1). At the Senate hearings the support of humane organizations throughout the country was added, and at neither hearing was any opposition to passage of the bill expressed.

As Congress moves toward adjournment, last minute opposition has sprung up from lobbyists for the fur and leather trades which are the cause of much of the present poaching and smuggling and other illegal activities causing great suffering to animals, which are already on the endangered list of the International Union for the Conservation of Nature.

Senator Ralph Yarborough (D., Tex.) who introduced S. 2984 with Senator Gaylord Nelson (D., Wis.) stated at the hearings: "The International Union for the Conservation of Nature and Natural Resources estimates that 10,000 leopards are taken out of Africa each year on license, which is the maximum attrition the species can bear and still maintain itself. But 60,000—six times that number—are taken by poachers each year. And 30,000 of those are females which are taken while their unweaned cubs are left to die of starvation."

The hearings brought out some of the ruses being used by dishonest importers with no concern that the objects of their trade are being destroyed in the process of their momentarily lucrative but basically unsound and transitory "business."

Most countries attempt to protect their endangered species of wildlife by law, and it is already against our own federal laws to import species taken illegally in a foreign country, but the law is constantly flouted because of loopholes. Hon. Stanley Cain, Assistant Secretary for Fish, Wildlife and Parks, Department of

the Interior, pointed out, "A species may be endangered, it may be declared in a certain country endangered and may be protected, but it can be got by poaching, can be transshipped to another country. And the labeling may show that it came from a country which any biologist knows it does not live in. Yet you do not have any handle on this problem of transshipment under present conditions." The Endangered Species Bill would provide this much needed "handle." Further, in the words of Dr. Cain, ". . . the bill would enable the Secretary to prevent the importation of endangered species whether or not illegally taken in another country. And I think this is an important feature of the bill."

Interested persons may obtain a copy of the Senate hearings entitled, "Endangered Species" (Serial No. 90-77) July 24, 1968, by writing to the Senate Committee on Commerce, Senate Office Building, Washington, D.C.

Remarks of Christine Stevens, President, Animal Welfare Institute, At the Meeting of The Delaware Valley Branch of The American Association for Laboratory Animal Science, Philadelphia, September 11, 1968

The Animal Welfare Institute was founded in 1951 to work for the welfare of laboratory animals. At that time no organization existed for this purpose. Instead, fruitless arguments as to whether or not animals should be used for experimental purposes continued to cause anger and bitterness with anti-vivisectionists on one side and medical people on the other. We have been unable to discover any benefits to the animals from this still continuing debate.

Because my father was chairman of the Department of Physiology at the University of Michigan Medical School, I grew up with a scientific background and general knowledge of animal experimentation. His knowledge and judgment played a major role in the founding of the AWI, of which he was a member of the first advisory committee—Peter Okkelberg, Dean of the Graduate School at the University of Michigan was another member of the committee who has since died, as was Eric Hansen, President of the Massachusetts SPCA. I mention these men in particular because they exemplify the attempt we made in founding the Animal Welfare Institute to be broad rather than narrow, to emphasize both humaneness and science. In the words of the prospectus issued in 1951:

The Institute believes that humanitarianism and science, far from being antagonistic, should complement each other if civilization is to progress.

The aim of the Institute will be:

- To promote the welfare of all animals.
- To reduce the total of pain and fear inflicted on animals by man.

The AWI has pursued these aims through a variety of means—most importantly through its educational publications and other materials which are available free on request to scientific institutions, veterinarians, administrators and other members of their staff. In a few minutes you will see an AWI film, "Laboratory Dogs," which documents the care and housing given dogs used in experimental surgery at the University of Ottawa Faculty of Medicine—the Ottawa system which has been so effective in bringing about successful surgical results.

The manuals, *Basic Care of Experimental Animals*, *Comfortable Quarters for Laboratory Animals*, and *Animal Expressions*, have been widely distributed in response to demand inside scientific institutions. *Basic Care of Experimental Animals* has been translated into Japanese, a German adaptation was made, and a Spanish translation is now underway. The first English edition was published in 1953, and it was revised in 1958, 1965 and again this year. The new edition is in the printer's hands at present.

Its purpose is to present briefly, in non-technical language and inexpensive form, the basic needs of the common laboratory animals and to provide practical suggestions on how to meet them. Revision of the 1958 edition was made by Mr. George Porter of the Laboratory Animals Centre of Great Britain. Dr. Harry Eschenroeder made an important contribution on methods of post operative pain relief to the 1965 edition. He was at that time the veterinarian overseeing experimental animals at St. Louis University Medical School.

For this fourth edition suggestions and criticisms were widely sought from experts who brought different types of experience and knowledge to the field. The Animal Health Division of the United States Department of Agriculture reviewed it to determine and eliminate any conflict with the U.S.D.A. standards under the Laboratory Animal Welfare Act, P.L. 89-544.

The tables on analgesic anesthetic or tranquilizing drugs and on euthanasia were prepared for the Canadian Council on Animal Care by its Executive Director, Dr. Harry Rowsell.

The manual is based on the premise that both science and humanitarianism are served by keeping laboratory animals contented and healthy.

You are invited to put in your order for as many copies as there are animal technicians or caretakers in your institution. These are provided free of charge by the Animal Welfare Institute.

Comfortable Quarters for Laboratory Animals was prepared for the use of those planning new animal quarters or remodeling old ones. Architects, administrators, and others involved in such activity are invited to request a free copy, and they are available to all of you who can make use of them in improving the housing of animals in your institutions wherever this is necessary. Like *Basic Care*, *Comfortable Quarters* has

gone through a series of revisions. It used to be in loose leaf form and we sent out supplements as we accumulated additional good designs—architectural drawings, floor plans and photographs. By 1966 it had become so bulky that it had to be critically edited, and, with many new designs, was brought out in regular manual form.

I want to invite all of you to contribute good ideas which you may have and photographs or plans you can get of unusually good housing for any type of laboratory animals for use in the next edition of *Comfortable Quarters for Laboratory Animals*. Your help will be most welcome, and your institution will be credited as is done with all illustrations in the manual.

In 1967 the AWI issued an entirely new publication, *Animal Expressions*, a photographic footnote to Charles Darwin's "The Expression of the Emotions in Man and Animals." Its educational purpose is less pragmatic than the manuals I have just mentioned, but it pursues the basic question—that of keeping animals contented and healthy—in greater depth. By following as closely as possible the categories of expression defined by Darwin, we have sought to show through the work of first-rate modern photographers the response of animals to their environment and to help those who come in contact with them understand the expressions on their faces and in their bodily postures.

To quote the introduction:

Darwin listed in his chapter entitled "Special Expressions of Animals" the following: Joy, affection, pain, anger, astonishment, and terror. In other chapters he dealt also with subtler and more intermediate emotional expressions; for example, "perplexed discomfort" caused by indecision. He was specific in stating

(Cont. on page 4, column 2)

BASIC CARE OF EXPERIMENTAL ANIMALS



ANIMAL WELFARE INSTITUTE

Cover of the new edition of "Basic Care of Experimental Animals," now in press.

Veterinarians, biologists, technicians, and animal caretakers employed in scientific institutions are invited to write for their free copy.

Please send one free copy of the new edition of "Basic Care of Experimental Animals."

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AWI BOOTHS AT AVMA AND MVMA CONVENTIONS

At the annual meeting of the American Veterinary Medical Association held in Boston, Massachusetts, July 21-25, 1968, a booth exhibit of the Animal Welfare Institute was presented featuring the subject of exercise and companionship for animals. A film, "Exercise: Essential Social Behavior in Mammals" ran continuously at the booth. The AWI is very grateful to the Oregon Regional Primate Center for making that part of the film which showed monkeys playing together with a stick, chasing one another, and performing acrobatics in a natural way in the spacious quarters provided for them. Gerbils housed in a roomy glass enclosure demonstrated typical playful antics, emerging from and disappearing into burrows in their thick bedding and running through improvised tunnels made of paper towel rolls. Dogs were shown running and playing both in home conditions and in runways at a laboratory animal boarding kennel. Dr. Barbara Orleans was responsible for the film as a whole.

Still photographs by Joseph R. Spies, specialist in cat photography, showed the remarkable agility of these animals caught by the camera in the act of leaping or running. Dr. Spies, author of "Cats and How I Photograph Them" (The Studio Publications in association with Thomas Y. Crowell, New York & London, 1958), very kindly loaned the pictures for the occasion as did Stan Wayman, *Life* photographer, who loaned a series of photographs of two kids playing together and butting one another off a rock from which they took enormous leaps.

Quotations from world-famous scientists on the subject were featured under the heading: "Observations of Yerkes, Pavlov, Hediger and other leading scientists on the importance of companionship for animals and the need to avoid close confinement if they are to develop normally and retain sound physical and mental health."

They were: "Companionship is essential to normal, healthful development and existence." (from *Chimpanzees, a Laboratory Colony*, by Robert N. Yerkes, Professor of Psychobiology, Yale University. Yale University Press, New Haven, 1943).

"It is clear that the freedom reflex is one of the most important reflexes, or, if we use a more general term, reactions, of living beings." (from *Conditioned Reflexes, an Investigation of the Physiological Activity of the Cerebral Cortex*, by I. P. Pavlov. Dover Publications, Inc., New York, 1960).

"Solitary confinement is unbiological." (from *Wild Animals in Captivity*, by Dr. H. Hediger, Director, Zoological Gardens, Basle. Butterworth Scientific Publications, London, 1950).

"Our observations demonstrate that rats given enriched experience develop, in comparison to restricted littermates, greater weight and thickness of cortical tissue and an increase in total acetylcholinesterase activity of the cortex . . ." (from "Chemical and Anatomical Plasticity of Brain," by Edward L. Bennett, Marian C. Diamond, David Krech, and Mark C. Rosenzweig, University of California. *Science*, October 30, 1964).

"Hypertension developed much sooner when the animal was confined, in a cage and its normal interrelations with the other monkeys was disrupted." (from *Comparative Pathology in Monkeys*, by B. A. Lapin and L. A. Yakovleva. Charles C. Thomas, Springfield, Illinois, 1960).

AWI manuals *Comfortable Quarters for Laboratory Animals* and *Animal Expressions* were available free to veterinarians attending the convention. Mr. George Jones of the Massachusetts SPCA very kindly joined Mrs. Robert Dyce, AWI Laboratory Animal Consultant, and Mrs. Robert Gould, AWI Publications Secretary, in manning the booth.

At the Michigan Veterinary Medical Association meeting June 22-25 at Boyne Mountain, good quarters for laboratory animals were featured in a continuous slide projection at the AWI booth. Slides from the

AWI collection were augmented by several loaned for the occasion by the Purina Company showing roomy animal quarters.

A Japanese translation and a German adaptation of *Basic Care of Experimental Animals* were displayed together with the beginning of a Spanish translation to be completed immediately following the new revision of this AWI manual. A display of photographs were captioned: "Some photographs of experimental animals in Japan showing need for animal welfare legislation and education," and "A well housed, well cared for experimental dog in a Japanese laboratory showing results of the work of the Japan Animal Welfare Society," and, finally, "An outstanding new research establishment in Frankfurt, Germany where test dogs are bred and data collected."

On a second panel, bad conditions in some pounds and pet shops illustrated the need for regulation of such animal holding centers at the state level.

Dr. Richard Pearce, who is a member of the Michigan Veterinary Medical Association and of the Scientific Committee of the Animal Welfare Institute, very generously gave his time, joining Mr. and Mrs. Dyce in manning the booth.

Remarks at AALAS Meeting (cont.)

his disagreement with Sir C. Bell, who "evidently wished to draw as broad a distinction as possible between man and the lower animals," a tendency still prevalent today. Darwin wrote that Bell "consequently asserts that with 'the lower creatures there is no expression but what may be referred more or less plainly, to their acts of volition or necessary instincts.' He further maintains that their faces 'seem chiefly capable of expressing rage and fear.' But man himself," Darwin continues, "cannot express love and humility by external signs, so plainly as does a dog, when with drooping ears, hanging lips, flexuous body, and wagging tail, he meets his beloved master. Nor can these movements in the dog be explained by acts of volition or necessary instincts, any more than the beaming eyes and smiling cheeks of a man when he meets an old friend. If Sir C. Bell had been questioned about the expression of affection in the dog, he would no doubt have answered that this animal had been created with special instincts, adapting him for association with man, and that all further enquiry on the subject was superfluous." Thus does Darwin dismiss an unscientific and dogmatic approach, in which the capability of animals to feel and to express themselves is belittled through prejudice. . .

To take the first in Darwin's list of animal expressions: Joy, he writes, "Under a transport of Joy or of vivid Pleasure, there is a strong tendency to various purposeless movements, and to the utterance of various sounds. We see this in our young children, in their loud laughter, clapping of hands and jumping for joy; in the bounding and barking of a dog when going out to walk with his master; and in the frisking of a horse when turned out into an open field. Joy quickens the circulation, and this stimulates the brain, which again reacts on the whole body." He offers an interesting theory to explain these expressive movements, saying, "Now with animals of all kinds the acquirement of almost all their pleasures, with the exception of those of warmth and rest, are associated and have long been associated with active movements, as in the hunting or search for food, and in their courtship. Moreover, the mere exertion of the muscles after long rest or confinement is in itself a pleasure, as we ourselves feel, and as we see in the play of young animals. Therefore, on this latter principle alone we might perhaps expect, that vivid pleasure would be apt to show itself conversely in muscular movements." And commenting on special expressions, he says, "A dog in cheerful spirits and trotting before his master with high, elastic steps, generally carries his tail aloft, though it is not held nearly so stiffly as when he is angered."

We believe that through a genuine understanding of animals, they can be treated in such a manner in scientific institutions that the criticisms justifiably made concerning abuses will no longer be made. Animals in laboratories can and should be contented and even happy. Their contribution to human and animal health, the prevention or cure of disease and injury is great. They deserve the best possible care and treatment. They do not deserve to be considered inconsequential, for they are not. Not only does enlightened self interest dictate that they be decently treated so they will not sicken and die of intercurrent infections or other irrelevant causes, but the fact that they are being sacrificed means that we owe them a debt. There is only one way in which the debt can be honestly repaid, and that is by doing our utmost to make these animals comfortable and happy.

You will notice in the manual, *Animal Expressions*, a number of emaciated, suffering animals in foreign laboratories. Most of these photographs were taken in Japanese medical schools and hospitals. We are informed that once a year doctors and others go to a little shrine to pay homage to the experimental animals—a religious rite. Were this verbal recognition transformed into the reality of food and kind treatment it would be most praiseworthy. Arduous efforts are being made by the Japan Animal Welfare Society to obtain better treatment for laboratory animals in that country.

Working with this organization, Dr. Anthony Carding has made some definite progress, and he is returning to Japan again this year to attempt to carry out the program he has planned for the instruction of animal technicians and the reconstruction of bad quarters. There is no legislation whatever in Japan against any kind of cruelty to animals.

Dr. Carding served for several months with the Animal Welfare Institute as Laboratory Animal Consultant with the assistance of Mrs. Robert Dyce who, after his departure for Japan, took on the task. This work constitutes another important feature of the AWI program for humane treatment of animals. By visiting laboratories throughout the country it is possible to provide on-the-spot advice and information such as is included in the AWI manuals. This service to animals and scientific institutions alike also ties in with law enforcement, for in those instances in which necessary improvements are not made, conditions are reported to state or federal authorities. Mrs. Dyce was appointed by the Governor of Michigan to serve on the Advisory Committee under the Michigan Laboratory Animal Care Law, and by law her reports on conditions observed for experimental animals are promptly submitted to the Michigan Commissioner of Health who has frequently acted to correct abuses when these were brought to his attention.

Mrs. Dyce has also inspected the premises of animal dealers and in one case invoked the State Anti-Cruelty law of Tennessee to correct a situation in which dogs intended for sale to research institutions were starving and neglected in filthy conditions spreading infectious disease and resulting in death.

Since the Federal Laboratory Animal Welfare Act, P.L. 89-544, was enacted Mrs. Dyce reports many major improvements in which it has not been necessary for the Animal Welfare Institute to take any part. A number of dog dealers have made expenditures of thousands of dollars—even tens of thousands in some cases—because their business is so lucrative they are prepared to act to comply with the requirements of the law rather than giving it up. Some 36 dog dealers preferred to go out of business. Scientific institutions have spent substantial sums in many cases to achieve compliance with the minimum standards issued by the United States Department of Agriculture—others have asked for the extension of time provided for under the Act before coming into full compliance.

It is a great encouragement to the AWI to find these important improvements taking place nationwide for research animals. After seventeen years of uphill

work we marvel at the effectiveness of the Animal Health Division of the Agricultural Research Service—a magnificent achievement for which we are profoundly grateful. We believe that enforcement of the Laboratory Animal Welfare Act, P.L. 89-544, which the AWI supported, is the single greatest advance in providing sensible, good care for research animals that has ever occurred in our country. Scientific institutions and their staffs who are responsible for the animals can be equally grateful for these valuable advances which contribute importantly to the accuracy of research results. It is important that all of us here should support the law and cooperate in maintaining the humane standards for research animals which is its purpose.

Returning to the activities of the Animal Welfare Institute, a quarterly *Information Report* is distributed widely including every member of the Federation of American Societies for Experimental Biology, public and university libraries, scientific societies, humane societies, deans of medical and veterinary medical schools and many individual veterinarians and medical people who have expressed an interest. In addition, the *Information Report* is sent to AWI members, and those of you who are interested in our program are cordially invited to become members.

Mr. Kaplan, in suggesting the content of this talk, asked me to refer to interaction with AALAS and ILAR. Representatives of the AWI have attended every AALAS meeting since 1952—a record perhaps unequalled by any except some of the founders. With ILAR, too, we have been in touch from the beginning from Berton Hill to Dr. Yager. We have not always been in agreement with either group, but I think it is fair to say that we feel there is progress in the direction of reducing differences. Certainly we feel that useful contributions have been made by both groups.

Our greatest differences inevitably arise when the position of institutions dictated by purely pragmatic factors rather than by objective scientific and humane observations are pushed forward. Attempts to continue to use small cages where animals are uncomfortably cramped, denied even the vestige of freedom or a resting place natural to the species—such attempts are often dictated by a simple unwillingness to dispose of existing outmoded equipment. America's greatness, however, is built on the willingness of the most forward looking of its industry to scrap obsolete equipment despite the fact that funds are required for something newer, bigger and better. We will continue to fight against attempts to defend an outmoded status quo where this causes needless suffering and distress to animals. At the same time, we are eager to find the most economical means of meeting the experimental animals' needs, and with this thought in view we had the film, "Laboratory Dogs" produced by Crawley Films.

In it you will see a highly effective, simplified way of maintaining dogs for experimental surgery. The animals you will see are on the sixth floor of the medical building. They have previously been held in an adjacent building under similar conditions being observed so that animals which might be incubating disease are not brought up to the sixth floor. Other laboratory animals, including mice, rats, rabbits, guinea pigs, chickens, ferrets and frogs, are maintained on the first floor.

Mr. Bélanger, then Superintendent of the Animal House, initiated the system which is being very ably continued under the direction of a veterinarian, Dr. Ann Currier, who regards it as the ideal method of maintaining research dogs. Dr. Waddell, who originally assumed that conventional methods were the only possible ones, became an enthusiastic proponent of the Ottawa System after his survival rate in experimental leg transplant operations rose from zero to 50%.

After you have seen the film, I will be happy to answer any questions you may have concerning the Animal Welfare Institute, its work, productions and aims.



"Laying Down the Law" by Sir Edwin Landseer. Cover picture for *Animals and Their Legal Rights* by Emily Stewart Leavitt and other authors.

RESPONSE OF LIBRARIES TO "ANIMALS AND THEIR LEGAL RIGHTS"

Through the generosity of members and friends of the Animal Welfare Institute, over 5,000 public libraries throughout the United States have received a complimentary copy of "Animals and Their Legal Rights" the new AWI paperback of Emily Stewart Leavitt and other authors. The response has been warm. Following is a sampling of typical comments:

"Herewith a belated acknowledgement and hearty thank you for *Animals and Their Legal Rights* by Leavitt. Information on this type of material and its availability seems nonexistent, . . ." Public Library, Roseau, Minnesota.

"It is a great asset to the library and will be enjoyed by many readers." William H. Hall Free Library, Edgewood, Rhode Island.

"This book is a welcome addition to our shelves as we had no material on this subject, and our borrowers are sure to be glad to have it available." Graham Public Library, Graham, Texas.

"We have a large number of patrons interested in animals and I know this book will be very much appreciated by them." Abington Library Society, Jenkintown, Pennsylvania.

"We appreciate your generosity in assisting us in our service to the patrons of the New Orleans Public Library." New Orleans, Louisiana.

"So delighted to get this book." The S.L. Griffith Memorial Library, Danby, Vermont.

"We are sure our patrons will find this book informative. This being a rural community many of the residents own animals." Mequon-Thiensville Library, Thiensville, Wisconsin.

". . . should be of great value as a reference source." Elizabethtown Public Library, Elizabethtown, Pennsylvania.

"It will be a valuable addition to our library. You are performing a service and awakening the public to a matter that is sometimes neglected." Willow Springs Public Library, Willow Springs, Missouri.

"This book is a most welcome and important addition to our reference library. We are impressed by

the thorough coverage given the subject, and we are certain the information provided will help us contribute to the welfare of captive animals." Chief, Division of Management and Enforcement, U.S. Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife.

"We are going to have the book bound to make it more durable." Hancock Public-School Library, Hancock, Michigan.

"This is a unique publication and will be a valuable addition to our collection." Kate Love Simpson Library, McConnelsville, Ohio.

"We appreciate your generosity and your interest in the Library." Phoenix Public Library, Phoenix, Arizona.

"We have nothing like this in our collection so it will be especially valuable. We think it will be of greatest value to school children for their school papers. It will be a mine of information to them, and adults will use it to determine if animals are being mistreated. They will be able to see if any legal action can be instituted. Thank you again." The Public Library of Cincinnati and Hamilton County, Cincinnati, Ohio.

"We did not have a book containing this material; therefore it is a valuable addition to our collection." Porter Doss Library, Weslaco, Texas.

Readers who wish to contribute to the fund for placing copies of the book in libraries may do so by sending a check to the address on the letterhead. Every dollar donated places one book in a library.

All of the more than 700 humane societies in the United States were offered a free copy of *Animals and Their Legal Rights*, too. Following is one of the responses received:

"As an active humane officer, I am delighted to have the laws of other states, etc. at my fingertips for ready reference and to have knowledge of the beginnings of the humane movement in this country in the early days. This (North Valley) Humane Society is perhaps small in membership compared to some of the well-known societies but we do actively enforce our state laws. . ." State Humane Officer, North Valley Humane Society, Inc., Chico, California.

Enclosed please find \$_____ for _____ copies of *Animals and Their Legal Rights* at \$1.00 per copy and \$_____ to send _____ copies to libraries.

Name _____

Address _____

Zip Code _____

DEALER'S LICENSE SUSPENDED FOR VIOLATING ANIMAL WELFARE ACT

One of the largest laboratory animal dealers in the United States will have its license suspended for 14 days, as the result of charges brought by the U.S. Department of Agriculture that the firm has not complied with regulations of the Federal law enacted to protect the welfare of laboratory animals.

The suspension against Dierolf Farms, Inc., of Boyertown, Pa., will go into effect on December 22, under the order issued by USDA's judicial officer.

In an out-of-court settlement, Dierolf Farms did not admit or deny charges brought by USDA under the Laboratory Animal Welfare Act of 1966 (PL 89-544). The firm agreed to the 14-day suspension as part of the settlement.

The firm was charged with shipping dogs and cats without proper identification; shipping animals in crates that were not easily accessible for emergency removal of the animals; selling cats that had not been held for the required 5 days; shipping animals in crates too small for each animal to have sufficient space to turn about freely, stand erect, or lie in a natural position; and of trucking animal in crates without intervening floors to prevent animals from contaminating animals on lower levels.

Under the provisions of the Act, the Department has issued a "cease and desist" order prohibiting Dierolf Farms continuing the listed practices.

During suspension, a dealer cannot buy or offer to buy, sell, transport, or offer for sale or transport, any animal covered in the Act. Further, the Act prohibits research institutions from doing business with the dealer during the period of suspension. Under a cease and desist order, if the individual continues to violate the regulations, the violation is much more serious. It may result in longer suspension of the license or complete revocation of the license.

HOWARD PRESENTS SCHWEITZER MEDAL TO QUINN

Dr. John F. Quinn, State Veterinarian and Chief of the Animal Health Division of the Michigan Department of Agriculture was awarded the 1968 Albert Schweitzer Medal of the Animal Welfare Institute on December tenth in recognition of his dedication to practical advancement of animal welfare in the enforcement of the Michigan Dog Law, Humane Slaughter Law and Laboratory Animal Welfare Act and his wisdom in creating the first standing committee on Animal Welfare of the United States Animal Health Association when he served as the Association's President in its 72nd year.

Mr. Jack Howard, the distinguished President of the Scripps-Howard Newspapers and Scripps-Howard Broadcasting Company made the presentation. Mr. Howard's remarks follow:

Presentation of the Schweitzer Award by Jack R. Howard

I am very grateful to the Animal Welfare Institute for according me the honor of presenting the 1968 Albert Schweitzer Medal which, as most of you know, is awarded annually in recognition of outstanding contributions to the welfare of animals.

The first such was presented in 1955 to Dr. Schweitzer himself whose philosophy, in his own words, "embodies our compassionate attitude toward all creatures."

In these brutal times some people may question the emphasis on animal welfare as against human welfare. In

(Cont. on page 2)

REASONS WHY ANIMAL EXPERIMENTS BY HIGH SCHOOL STUDENTS SHOULD BE PAINLESS

by F. Barbara Orlans, Ph.D.*

1) **MORALLY**, it is indefensible to hurt or kill animals unless original contributions which will advance human health and welfare can be expected. Elementary and secondary school studies do not meet this test.

2) **PSYCHOLOGICALLY**, it can be emotionally upsetting for youngsters to participate in harming or killing animals, or even worse, it may be emotionally desensitizing or hardening to immature minds.

3) **SOCIALLY**, in these days of widespread violence fostering personal acquaintance with inflicting pain on lesser creatures should be avoided unless these unfortunate consequences are decisively outweighed by important social benefits that can be achieved in no other way.

4) **EDUCATIONALLY**. Teaching about abnormal states before the student has a sound grasp of normal physiology is against common sense and does not advance scientific education.

5) **SCIENTIFICALLY**, Promoting teenage animal surgery or induction of painful pathological conditions (which are very often poorly done in the unsanitary conditions of a student's home and have no scientific value) fosters an improper regard for animal life and an unbalanced view of biology which will rebound adversely when the next generation of scientists comes of age.

PREVENTION OF SUFFERING BY TRAPPED ANIMALS THROUGH USE OF TRANQUILIZER

Although the prospects for eliminating the cruel leg-hold trap in the United States are far from promising, it may be possible to eliminate much of the pain caused by these traps in the capture of carnivores. A study conducted by the U.S. Bureau of Sport Fisheries and Wildlife on the use of tranquilizer shows great promise.

An article by Donald S. Balser, "Tranquilizer Tabs for Capturing Wild Carnivores" which appeared in the Journal of Wildlife Management, Vol. 29, No. 3, July, 1965, suggests the following purposes and uses:

"The potential applications of this device are (1) taking unharmed animals for various purposes, (2) enabling easy release of recalcitrant dogs and reducing foot damage to valuable dogs and other pets, (3) helping prevent the escapement of trapped animals, and (4) making the steel trap more humane."

The last application is clearly of paramount importance; however, the other favorable points should assist in obtaining adoption of the tranquilizer tabs by trappers.

The tranquilizer tested by the Bureau is "Diazepam." Tests with penned coyotes indicated that animals trapped in the wild would remain tranquilized from shortly after capture for one to two days. Field trials indicated that the animals often remain tranquilized for even longer. Thus the terrible struggling and resulting injury which, in turn, causes even greater pain and fear would be virtually eliminated. The extent to which the tranquilizer prevents such pain and fear is indicated by the fact that most of the skunks trapped using the tranquilizer tab did not even

(Cont. on page 2)

*An article, "The Boundaries of Use of Animals in High School Biology" by Dr. Orlans was published in the October 1968 issue of THE SCIENCE TEACHER. Reprints may be obtained from the Animal Welfare Institute.

Prevention Of Suffering By Trapped Animals Through Use Of Tranquilizer

(Cont. from page 1)

eject their scent when destroyed or released. Clearly, the experience of being trapped is radically changed if the animal takes the tranquilizer. The difference can be compared to that of undergoing a prolonged operation with or without anesthesia.

Further work needs to be done to bring the number of animals taking the tab closer to 100%. The tranquilizer tab is taken by a majority of coyotes, foxes, skunks, raccoons, opossums, badgers, bobcats and Red Wolves, as shown in field trials in Arizona, Arkansas, California, Massachusetts, Minnesota, New Mexico, Oklahoma, South Dakota and Virginia. However, only 5 of 17 dogs inadvertently trapped took the tab. Apparently, wild animals express immediate natural aggression against the pain-causing trap more often than do domesticated animals. They bite the trap at the point nearest their trapped foot, and it is at this point that the tab is attached.

The Conibear trap, now very widely used for the trapping of muskrats, substitutes effectively for the leg-hold trap for these animals. The Conibear is designed to kill instantly, and though it sometimes fails to do this, it does kill quickly, so prolonged suffering is prevented and the animal is not left to gnaw off its foot as approximately 25% do when caught in a leg-hold trap. Conibear traps, however, have not proved practical for large carnivores. Thus, the tranquilizer tabs fill a very important gap. Their use should be supported and encouraged until the time when leg-hold traps are completely outlawed. Availability of Diazepam and similar tranquilizers, their requirements for use and distribution, are being looked into with the active cooperation of the Bureau of Sport Fisheries and Wildlife and will be reported in future Information Reports.

Howard Presents Schweitzer Medal To Quinn

(Cont. from page 1)

my mind, the two go hand in hand. I don't believe we will ever achieve our goals in human welfare without achieving our goals in animal welfare.

The creatures who are the Animal Welfare Institute's concern can teach us much. By exposing ourselves to them through projects and programs of the kind to which the man we honor this evening has dedicated himself, we may even learn eventually how to live with each other. Who can be concerned for an injured puppy and not for an injured child?

The 1968 recipient is Dr. John F. Quinn, State veterinarian and Chief of the Animal Health Division of the Michigan State Department of Agriculture. Dr. Quinn is a past president of the United States Animal Health Association, a past president of the Michigan Veterinary Medical Association, and a member of the Executive Committee of the American Veterinary Medical Association.

When I learned that he was graduated from the Veterinary School of Michigan State College only 25 years ago, I concluded he has probably been one of the busiest veterinarians in the country.

I know he has been especially busy in regulatory work—enforcement of animal welfare laws like the Michigan Dog Law, the Humane Slaughter Law and the Laboratory Animal Welfare Act—and in efforts to enact laws for regulation of dog pounds, research institutions and pet shops.

A major reason Dr. Quinn is being honored is because it was he who, as President of the United States Animal Health Association, established a standing committee on animal welfare, the first time any veterinary group has established such a committee. His work is of tremendous importance.

My own awareness of its importance is regretfully of relatively recent date. It began several years ago with the publication in the Memphis Press-Scimitar of an exposé of the shocking conditions that were routine at a monthly dog auction in a small town in Mississippi.

Unfed, unwatered dogs—some bound, some injured—were herded into trucks and dispatched north to be sold to institutions. Often these were pets stolen from their owners. All of this is an old story to the Animal Welfare

Institute but it was a rude awakening for me, and it made me appreciate the good work which has been set in motion by Dr. Quinn's efforts.

In the course of preparing for this pleasant gathering and its recognition of humane leadership, I came upon one of Noah Webster's definitions which seemed appropriate to this occasion. It describes "humane" as "having, showing or evidencing a disposition to treat other human beings or animals with kindness or compassion." This is a rare quality but Dr. Quinn most certainly has it, and I am happy to present to him on behalf of the Animal Welfare Institute the 1968 Albert Schweitzer Medal.

Remarks of Dr. John F. Quinn

I am overwhelmed and very humbly honored to receive this wonderful award, and, at this time, pledge myself to live up to the reverence for animal life for which this award stands.

The position, which I hold as State Veterinarian in Michigan, has historically and traditionally, through the years, revolved round the control and eradication of animal diseases, and by that I mean diseases of the common domestic farm animal.

Little attention was given to our animal pets, either from a disease standpoint or from the standpoint of just and humane treatment. However, in latter years, because of an increased interest in the humane treatment of animals, new laws have been passed, both on the Federal and State level, regulating the care and treatment of all species.

Examples of some of these on a State level in Michigan is the Animal Welfare Act, which was passed in 1965 and patterned almost exclusively after Public Law 89-544; the Michigan Humane Slaughter Law, which restricts the use of inhumane devices in the routine slaughtering of meat animals, along with the Cruelty to Animals Law, which restricts the maltreatment of animals in public places as well as on the owners' premises, has helped us tremendously in the treatment of animals by livestock producers.

We also have a rather primitive sounding law which prohibits the feeding of dead animals to other animals. This law might sound a bit facetious but experience has proven to us that it is not below some sadistic livestock owners to attempt to dispose of animals in their care, which have died, by feeding them to the poor, half starved carnivores left on the premises. This latter condition generally goes along with such an owner who, generally, does not have enough compassion in his heart for poor, dumb beasts to provide them with adequate nutrition.

These laws which I have mentioned have proved helpful toward requiring that animals receive proper treatment but more legislation and more laws are needed. For example, to improve conditions in so-called pet shops and dog pounds. Some very atrocious conditions have been brought to light in public dog pounds. I do not mean that the local government authorities, who maintain dog pounds, are all bad for a great number of them maintain very fine facilities for stray dogs and ensure that they are properly cared for. However, other local authorities have been very neglectful in this area.

As a state animal health official, I am extremely interested in the humane treatment of all of our animal friends, not only because I am a veterinarian and love animals, but because I have become convinced, over the years, that the words 'animal health' and 'humane treatment' are synonymous in all respects. Having practiced for a number of years prior to entering regulatory work, I observed that the animals under the care of a kindly, mild mannered man are very often of the same disposition and, more often than not, attained a high degree of health. The few times that I was injured while pursuing the duties of my profession as a practitioner, was either by being kicked or bitten by an overwrought, nervous animal, who automatically thought it was to be mistreated again.

The intelligent livestock producer, for instance, has found that beyond the compassion, which he holds for his animals, it is economically to his benefit to be kind to them and give them the proper care. The carcasses of meat animals which have been cruelly beaten bring a lower price on the market than those which have not had to withstand such treatment.

For example, the organization, of which some of you might be aware, called Livestock Conservation, Inc., has committees that are doing work on the proper treatment

of meat animals confined in stockyards and transported via truck or railroad car. They furnish literature outlining the proper materials and plans for the construction of confining pens and loading chutes so that animals are not injured when entering, leaving or going through these areas.

Also, I am very gratified and thankful that after seventy-two years of existence the staid, old United States Livestock Sanitary Association which, I might add, just recently lost its name and is now called the United States Animal Health Association, too, has become interested in animal welfare.

A new Committee has been formed within this organization to deal with the problems of animal welfare and is charged with the responsibility of developing model legislation which can be used as a guideline by either States or the Federal Government in regulating the proper treatment of our animal friends.

This, to me is a wonderful step in the right direction for the United States Animal Health Association has through the years built up a world-wide reputation for developing and promoting animal health programs and its membership is made up of all phases of the livestock industry.

I give great credit to the animal welfare societies for the work which they have done to improve the lot of our animal friends. However, this is not enough. Everyone in our great country, even remotely connected with animals, must be encouraged to take part in a concentrated effort to see that all animals receive decent treatment. We know that it does sound like an insurmountable goal to work toward but I am sure, in my own mind, that it can be achieved and doubly sure that it must be achieved.

Mankind could not have survived in this country without the help of his animal friends, therefore, I think it would be a small tribute to repay what they have done for us with a little kindness on our part.

In conclusion, on behalf of the Michigan Department of Agriculture and myself, I wish to thank all of you who were responsible for bestowing this wonderful gift on me.

* * *

A report was made at the Schweitzer Award ceremony by Animal Welfare Institute Laboratory Animal Consultant, Dorothy Dyce, as follows.

Shortly after the passage of The Laboratory Animal Welfare Act, P. L. 89-544, Dr. René Menguy, Chairman of the Department of Surgery, University of Chicago made a speech that included the following comments on the standards of procurement of animals for biomedical research.

"We must accept the fact that until now the majority of biomedical investigators have not been the least interested in the source or the quality of the animals that are used for their research. The only thing that they are interested in is having the animal in the laboratory on the day of the experiment".

Thousands of animals had to suffer abuse, neglect and starvation while being collected and distributed to our nation's animal-using laboratories who yearly receive a billion dollars in federal grants. But now that the law is in effect, dealers must be licensed and inspected. To date 183 dealers have been licensed and their facilities are inspected twice a month. The United States Department of Agriculture is doing a splendid job of enforcement. It has charged one of the nation's largest suppliers of animals for medical research with four violations of Public Law 89-544. Thirty-six other dealers, either unable or unwilling to comply with decent standards, have gone out of business. To date, 537 research institutions with animal facilities in approximately 1600 locations, have registered in compliance with P.L. 89-544. Fifteen institutions have asked for an extension of time in order to comply with standards. In our laboratory visits since passage of P.L. 89-544 we have seen more major improvements in animal housing. In some instances the changes have been dramatic and some of the worst offenders were the first to make a hasty compliance. For example, at a large midwest hospital, a building on the hospital grounds has been converted into an animal house and 160 pens installed. Some of the dogs transferred to the pens had spent years in a cage. One such dog had been caged for seven years before being released.

The United States Department of Agriculture now inspects each research facility once a month; however, some institutions, anxious for non-government inspection and approval have applied for accreditation through an organization called The American Association for Accreditation of Laboratory Animal Care. The members of the council on accreditation, all staff members of medical schools or other research institutions, make the "site visit" to determine whether an institution should be accredited. A week or more of advance notice is given before the inspectors arrive and further site visits may be put off for as long as three years. Ninety-nine research institutions have been accredited to date at fees ranging from \$100 to \$1000.

In visiting a well-endowed hospital in southern California a few years ago another Animal Welfare Institute representative found row upon row of caged dogs in a basement laboratory. The dogs, many of whom were used in major, long-term experimental surgery, were never released from their cages. Her determined efforts convinced hospital administrators and twelve runs were installed for exercising the dogs.

Four years ago I visited this institution on the Friday preceding a three-day holiday. Accompanied by a county veterinarian we arrived shortly after the caretakers had left. About 120 dogs were in cages. One of them, an enormous Great Dane, was hopelessly huddled in a cage so small that his legs hung out through the cage bars and onto the floor. A dog just out of surgery had been left unattended—a dead dog occupied a cage above a large dog too weak to stand. Asking the veterinarian about this pitiful animal he told me that much of the work on animals involves experimentation with stomach fistulas. The dogs, unable to eat after surgery, become completely emaciated and eventually waste away.

In March of this year I made a return visit to this hospital and found conditions to be far from good. The hospital employees were glad to see me but the hospital director did not share their enthusiasm. I was asked to come to his office where he told me that my visits would no longer be permitted because the facility is now completely accredited by The American Association for Accreditation of Laboratory Animal Care. He emphasized that the hospital had paid for this service.

It is my good fortune to live in the State of Michigan where the words—*Animals and Their Legal Rights*—have true meaning. Their rights are acknowledged and aggressively enforced by Dr. Quinn who has opened the door for further protective legislation in the many areas where it is needed.

As President of The United States Animal Health Association he urged his colleagues to participate actively in furthering the welfare of small animals not protected under present legislation. He emphasized the need for control of diseases and handling of animals in dog pounds, pet shops and animal shelters.

As a result of his recommendation, a standing committee on animal welfare was formed. In the short period of one year a model state law was drafted and consideration given to the need for controls by the State over animal dealers not covered by P.L. 89-544 such as bunchers or collectors of small numbers of dogs or cats, as well as auctions, trade days and boarding kennels.

U.S.D.A. PUBLISHES ADVICE ON PETS

The Animal Husbandry Research Division of the Agricultural Research Service has issued a 24-page booklet entitled, "Selection and Care of Common Household Pets". Illustrated with 22 pictures of mammal and bird pets, it gives advice on caring for, feeding, training and housing the different varieties and on selecting them wisely. It makes reference to other bulletins and leaflets published by the United States Department of Agriculture in which additional information on certain species is detailed. The material is presented in a simple, direct manner suitable for children as well as adults.

"Selection and Care of Common Household Pets" may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 at a cost of 15 cents. It is Agriculture Information Bulletin No. 332, U.S. Department of Agriculture.

NEW ANIMAL WELFARE INSTITUTE INTERNATIONAL COMMITTEE

The Animal Welfare Institute has had international connections from its inception and has sought advice and cooperation from humanitarians throughout the world, as well as distributing Animal Welfare Institute publications on a worldwide basis. This year a beginning has been made toward formal recognition of some of this work by establishing an International Committee composed of: Major C. W. Hume, London, England; Dr. Sydney Jennings, Mexico City, Mexico; David Ricardo, Vancouver, Canada; Dr. Pierre Rousselet-Blanc, Paris, France; and N. E. Wernberg, Copenhagen, Denmark. The following notes will serve to introduce members of the new committee.

Major C. W. Hume needs no introduction to regular readers of the Animal Welfare Institute Information Report. His first contribution to it appeared in its fourth issue, June-July, 1952. Characteristically, he drew the distinction between humanely and inhumanely conducted animal experiments, citing an example in which sheep were anesthetized but rats were not for the same painful procedure in experiments conducted at different institutions.

Major Hume, Founder of the Universities Federation for Animal Welfare, served as its Secretary-General for many years till his recent retirement. Author of numerous papers and articles which appeared in periodicals from *The Lancet* and *British Nature* to *The Observer*, his training as a physicist with a qualification in biology served him well in the development of UFAW whose scientific approach to animal welfare has enabled it to enlist the aid of leading scientists. For example, Sir Peter Medawar F.R.S. was Chairman of UFAW's Scientific Committee.

A number of the Hume books and articles are available from the Animal Welfare Institute including "The Ethics of Animal Experimentation", "The Strategy and Tactics of Experimentation", "How to Befriend Laboratory Animals", "In Praise of Anthropomorphism", and "The Status of Animals in The Christian Religion"—the latter beautifully illustrated by Fougasse (Kenneth Bird, who was editor of *Punch* and Chairman of UFAW). In addition to his own writings, Major Hume encouraged other important publications, for example the book, "The Principles of Humane Experimental Technique" by Russell and Burch in which Reduction, Refinement, and Replacement in animal experimentation were documented and discussed. The Animal Welfare Institute owes much to Major Hume's wise counsel and steadfast practical help since its founding.

Dr. Sydney Jennings is a university professor who has taught veterinary medicine for the past 23 years in universities in Britain, Peru, East Africa and Mexico, and is a past President of the British Veterinary Association. He is at present working with the Food and Agriculture Organization of the United Nations as team leader in a project for veterinary education in the National Autonomous University of Mexico. Although Dr. Jennings has taken an active interest in animal welfare over so many years, his particular contribution in this field has been his original work in animal anesthesia which he has demonstrated in many countries and he is the author of various papers on the subject. In Britain, as a result of his work in anesthesia, the Royal College of Veterinary Surgeons awarded him the Livesey Gold Medal which is for the most serviceable work towards the prevention and/or alleviation of pain and/or fear in animals. His long standing interest in animal welfare, his broad knowledge of international veterinary medicine and education and his personal contacts with innumerable veterinarians throughout the world make his participation on the Committee of particular value.

Mr. David Ricardo was a founding member of the Animal Welfare Institute Advisory Committee and, at that time, was the executive head of the Vancouver SPCA. It was through his efforts that the Vancouver Agreement whereby dogs from the pound that would otherwise be

destroyed were made available to the University of British Columbia for studies in which the animals were first fully anesthetized and never allowed to recover consciousness, in other words for completely painless experimentation. Mr. Ricardo also gave lectures to the medical students on the importance of humane treatment of animals, and he inspected all animals used for teaching and research at the University.

He established and promoted the principle that dogs used for chronic studies should have known heritage and background, and Labrador crosses raised at the University filled this role to a great extent, thus heading off the growth of unscrupulous dog dealing operations and of use of unnecessarily large numbers of these animals.

Although unremitting attacks by anti-vivisectionists drove him to resign his post with the SPCA, Mr. Ricardo remained a member of the Animal Welfare Institute Advisory Committee until it was dissolved this year and he moved to the new International Committee.*

Dr. Pierre Rousselet-Blanc is Vice-President of the Brigade de Défense des Animaux with headquarters in Paris. He is active in its educational, legislative and shelter work and serves as editor in chief of its publication, *La Voix des Bêtes*. The important strengthening of the French Anti-Cruelty law in 1963 and enactment of the French Decree Regulating Experiments on Animals in 1968 were due in great measure to the work of the B. D. A. Most recently, their efforts have led to prohibition of experiments by school children in which animals suffer pain or death. The action was taken by the Minister of Education.

Dr. Rousselet writes a regular column of veterinary advice for pet owners for *Paris-Jour*, a French daily of wide circulation, and for *Sud-Ouest* he writes "*La Vie des Bêtes*". He makes frequent appearances on radio and television on behalf of animal welfare, serving as technical counsel for radio broadcasting R.T.L. He advises on the care and treatment of animals received at B.D.A. shelters throughout France and recently traveled to the United States to attend the Boston meeting of the American Veterinary Medical Association.

On January 25th Dr. Rousselet will lecture at The University of Paris on Viral Infections in the Dog.

Mr. Wernberg is a civil engineer who heads the firm of N. E. Wernberg Consulting Engineers and Architects for the Food Production Industry in Copenhagen. Mr. Wernberg reports that the firm has made 120 installations of carbon dioxide anesthetizing equipment in slaughterhouses in 22 different countries including: Austria, Canada, Czechoslovakia, China, Denmark, England, Eire, Finland, France, Germany, Holland, Malaysia, New Zealand, Norway, Peru, Rumania, Sweden, Switzerland, Thailand, U.S.A., U.S.S.R., and Yugoslavia.

The firm manufactures differently designed CO₂ machines for different plants—the Oval Tunnel, The Ferris Wheel and the Dip-Lift. A fourth—the Compact type in which the pigs are held in a rubber sided restrainer while being moved—is now being tested. Mr. Wernberg notes, "Several of our first customers have after 10 years of operation started to buy new plants, as the old ones are becoming worn or too small in capacity. We take this as a sign that once the slaughterhouses have experienced the advantages of the CO₂ method over the electric stunning they will hold on to this method in spite of the higher cost of operation". Many of the countries in which the Wernberg humane anesthetizing installations have been made are outside the sphere of contact of the national and international humane organizations with which American humanitarians are in touch. Mr. Wernberg's achievement is a remarkable one and we are proud to have him on the Animal Welfare Institute International Committee.

*Dr. Lee R. Dice and Dr. F. Barbara Orlans, former Advisory Committee members, are now members of the Animal Welfare Institute Scientific Committee on Humane Standards for Research Animals.

ANIMAL WELFARE INSTITUTE

Scientific Committee on Humane Standards for Research Animals

Marjorie Anchel, Ph.D.
Lee R. Dice, Ph.D.
Bennett Derby, M.D.

F. Barbara Orlans, Ph.D.
Nicholas Gimbel, M.D.
Paul Kiernan, M.D.

Samuel Peacock, M.D.
Richard G. Pearce, D.V.M.
John Walsh, M.D.

International Committee

Major C. W. Hume, O.B.E., M.C., B.Sc., M.I. Biol.—United Kingdom
Sydney Jennings, M.R.C.V.S., D.V.A.—Mexico
David Ricardo—Canada

P. Rousselet-Blanc, D.V.—France
N. E. Wernberg—Denmark

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