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The American Physiological Society has recently prepared and issued to each of its 1380 members "Guiding Principles in the Care and Use of Animals", reprinted below. The Animal Welfare Institute offers its sincere congratulations to the Society on taking this important step towards solving the ethical and practical problems involved in animal experimentation. A letter expressing the hope of the Institute that these principles might be supplemented in the course of continuing efforts by the Physiological Society to promote the welfare and prevent the suffering of experimental animals received a kind reply from the President-elect of the Society, Dr. Hiram Essex. Dr. Essex reported a positive interest in the humane treatment of animals on the part of members of the Society and stated: "The principles as they stand are the result of a great deal of effort. It was difficult to keep them from becoming a set of specific regulations and not guiding principles. We conceived of their purpose being like the United States Constitution, broad, with details being supplied by some other means."

**GUIDING PRINCIPLES IN THE CARE AND USE OF ANIMALS**  
(Approved by the Council of the American Physiological Society)

"Only animals that are lawfully acquired shall be used in this laboratory, and their retention and use shall be in every case in strict compliance with state and local laws and regulations.

"Animals in the laboratory must receive every consideration for their bodily comfort; they must be kindly treated, properly fed, and their surroundings kept in a sanitary condition.

"All major operative procedures must be done under a general anesthetic; minor operative procedures may be done under local infiltration anesthesia. If the nature of the study is such as to require that the animal survive, acceptable technic must be followed throughout the operation on dogs and cats. If the study does not require survival, the animal must be killed in a humane manner at the conclusion of the observations.

"The postoperative care of experimental animals shall be such as to minimize discomfort during convalescence. All conditions must be maintained for the animal's comfort in accordance with the best practices in small animal hospitals or in accordance with the practices followed in human medicine and surgery.

"When animals are used by students for their education or the advancement of science such work shall be under the direct supervision of an experienced teacher or investigator. The rules for the care of such animals must be the same as for animals used for research."

**LABORATORY ANIMALS IN WASHINGTON, D.C.**

In 1949, a Senate hearing was held on S.1703, a measure which would have compelled the surrender of dogs from the District of Columbia pound for experimentation, without providing effective humane guarantees of the manner in which they might be used and cared for. A considerable body of testimony was submitted at that time by proponents and opponents of the measure.

While S. 1703 was under consideration, Senator Arthur Vandenberg, who was firmly opposed to it, wrote a constituent, "I do not believe that Congress will *ever* pass a measure such as this." (Underlining his) He was correct insofar as S. 1703 was concerned. However, since that time, legislation has been passed giving the Commissioners of the District of Columbia wider powers than they possessed in 1949, and a few months ago, they proposed an order embodying the same features as those contained in the aforementioned Senate bill.

Public hearings were held on the Commissioners' proposed order on December 4, 1953 and January 25, 1954 in Washington, D.C., and supporters and opponents of the measure from various parts of the country added their testimony to that of local speakers. Representatives of the AWI attended the January 25th hearing, and the text of the statement presented by the president is printed below. In addition, the Institute submitted several pages of specific comment and suggestions to the Commissioners, which included standards for animal care and housing, requirements for the licensing of institutions and individuals and an analysis of the order as proposed.

"For the past two and a half years the Animal Welfare Institute has studied problems relating to animal experimentation. The proposed Commissioners' Order deals with four major points: (1) Procurement of dogs and cats for laboratories, (2) Operation of a pound which acts as a procurement agency, (3) The care and housing of experimental animals, and (4) The way in which animals are used in scientific work. These are important problems which need to be faced. This Order does not face them squarely.

"To be fair and just, an Order on this subject must protect laboratory animals against cruelty and negligence; it must protect scientists against unfounded attacks by eliminating the grounds for well-founded criticism of the treatment of laboratory animals; it must protect the owners of dogs and cats, as well as those whose sympathies extend to stray and unwanted animals, against the fear and worry that these animals will be subjected to suffering if they reach a pound which acts as a procurement agency for laboratories; and it must protect the tax-payer against the development of a less efficient or more expensive pound operation.

"Reports on the effects of legislation similar to the Order being considered today show that it does not accomplish these things, nor has it eliminated the danger of theft of pets for sale to laboratories. Dog and cat dealers sell to many laboratories in areas where animals are also available from the pound.

"I shall summarize the major points which our studies lead us to believe would provide the necessary protection for all interested parties.

"First: To protect animals from unnecessary suffering and scientists from unfounded attack, a well-planned, carefully administered system of licensing and inspection of laboratories should be established. Each scientific institution desiring to use animals should be required to adhere to definite minimum standards in regard to the care and housing of the animals and to insure that no infractions of the Order are permitted on its premises. In addition to the licensing of institutions, each person desiring to conduct experiments should also be individually licensed. Unless this is done, it would be impossible to enforce humane treatment of animals because it is inconceivable that the license of an entire institution should be suspended in order to punish a single scientist who had behaved in a cruel or callous manner. Infractions of rules by a licensee should be dealt with by warning, suspension or revocation of his license depending on the severity of the offense. Properly administered, such a system can protect animals and scientists alike.

"Second: In order to protect animal owners and the public at large, not only should the matter of holding and release of animals be carefully scrutinized as outlined by other speakers who have given special study to this aspect of the matter, but most importantly, the use of impounded animals should be limited to non-survival experiments, in which the animal is first fully anesthetized and is killed without recovering consciousness. In this way, public confidence in the pound can be maintained, for no impounded animal will be subjected to suffering. It would mean, in effect, that a humane death would be administered in a laboratory rather than in the pound. There are sound scientific reasons for establishing this principle, as well as humane ones. Dogs and cats from a pound are anything but uniform. It is seldom possible to obtain information on their history and heredity. Yet they can be used under anesthetic for many non-recovery experiments. For chronic experiments—those in which animals are kept alive over a period of time—more accurate knowledge is a recognized scientific desideratum and animals should be bred for the purpose. A report from the National Research Council states: 'It is obviously just as improper for a scientist to work with inadequately defined animals as it is for him to use impure drugs or badly calibrated measuring instruments.'

"Administration of the Order should be governed by a Board so composed that the interests of animal welfare are equally represented with those of research.

"I wish to submit for your consideration more detailed recommendations, together with our publication 'Basic Care of Experimental Animals' which may serve as a guide to the proper care and housing of animals.

"In closing, permit me to observe that I believe the majority of experimental biologists to be humane in planning experiments; they voluntarily conform to a moral code which I hope will be made definite in any Order you may pass. Such a code does not hamper them. However, there are cruel men among scientists just as there are in every group. Cruelty must not be condoned because it happens in a laboratory. Nor should the widespread animal suffering which comes from negligence or thoughtlessness be condoned. Poor animal care and housing does not advance science, rather it retards it. Experimental animals deserve kindness and consideration. They should not be kept imprisoned in small metal cages with nothing but wire mesh for a bed in dark, dirty rooms, unattended when they are ill, denied the opportunity for exercise and companionship. They are being sacrificed for human benefit. The very least we can do is to protect them from unnecessary suffering. I urge you to see that this is done."

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On February 23, 1954 the Commissioners adopted two Orders, one making animals from the District Pound available to laboratories, and the other setting up standards on their use and care. It is regrettable that the procurement provisions suggested above were not adopted; nevertheless, the Commissioners have shown, in the second of these Orders, that they understand the pressing need for protection of laboratory animals. The provisions which they have made, although incomplete, deserve respectful recognition as one of the few thoughtful efforts ever made by public officials in the United States to deal with the problem of humane treatment of laboratory animals. It is to be hoped that the Commissioners will insist that the standards governing care of animals from the pound will be scrupulously observed, that they will be extended to include *all* animals used in local laboratories, and that those aspects of the problem of ensuring humane treatment of laboratory animals which are not yet adequately covered will be studied with a view to supplementing the Order as necessary.

The extraordinary blind spots which apparently exist in the minds of some users of experimental animals indicate how essential it is that proper standards be set and strictly enforced. For example, in the course of the recent public hearings, the fantastic statement which has been repeated so often in the past few years that it has almost reached cliché status was again given several repetitions by spokesmen for medical research. According to these speakers, dogs are better fed, better housed, better cared for and given greater consideration and kindness in experimental laboratories than they are in most houses. Even if the question of painful experiments is put aside, can it possibly be the sincere belief of any trained scientific observers that most houses provide no more than five or six square feet of space for the family dog (as many laboratories do)? Do they believe that the average American dog owner forces his dog to sleep on wire mesh (as many laboratories do)? Or that it would show greater consideration and kindness on the part of the owner if he refused to let his dog lie down on the rug or even the bare floor and relegated him instead to a metal cage? Do they believe that dogs which receive no attention from human beings except when undergoing experimental observations or having their cages cleaned (which is routine management in many laboratories) are being treated with greater consideration and kindness than the average house pet? Can they believe that most dog owners never give their animals the pleasure of going out of doors?

The fact is that it is difficult and sometimes impossible to provide all of the comforts of home in an institution, whether for human beings or animals, but it would be to the credit of medical scientists to urge that all laboratory dogs be more kindly cared for than the average dog, in every way that is possible. These animals deserve favored treatment, for they are being sacrificed for human benefit. Every humane scientist ought to demand that an order such as the one under discussion should be just as effective in guaranteeing humane use and care of animals as it is in making animals available to laboratories.

The great need for such a demand was made clear by representatives of the Washington Humane Society who testified at the hearing. An officer of the Society described the visits she made to laboratories subsequent to the 1949 Senate hearings referred to above, and listed the recommendations for better care and housing for laboratory dogs which she had made at that time, at the request of a public relations official for the local medical society. She continued:

"In November of this past year, just before the December hearing in this matter, I again—accompanied by officers of the Washington Humane Society—made a tour of the laboratories, hoping to find improved conditions. If anything, they were worse. I saw overcrowded small cages with wire floors, piled one upon another, in a narrow aisle. I saw also a large collie in a cage so small he could neither lie down or turn around. When I exclaimed to the attendant about this he said: 'Oh, he can stand up enough. Besides he has been there only two or three days'—and then he added, 'They'll operate on him soon and he'll die anyway.' . . .

"The doctors have testified here that all operations are done under anaesthesia, except where this would interfere with the nature of the experiment. I believe this to be true. However, having undergone several operations myself, I know that the patient suffers, not during, but after the operation, even with the best of care and attention, and not lying on wire.

"Only one of our local institutions has outside runs, although another has acres of concrete space for cars. . . ."

It is with considerable relief that humanitarians find that, for the first time in any comparable regulations, the Commissioners' Order includes a section entitled "Exercise Pens and Runways" which requires that "unless exercise interferes with the purpose of the study, each large animal shall be given an opportunity to exercise outside of the cage daily," and puts in a good word for outside runways. Some progress in ameliorating the most extreme conditions of overcrowding is also made in the provision: "Cages for dogs shall *not* be more than two (2) tiers high, and the lower tier must be adequately protected from the excreta from the upper tier."

If well administered, another provision of the Order will make progress towards placing more responsibility for his animals on each individual scientist, an urgently needed step. The entire laboratory is licensed in the name of one man; however, the Order also requires that "all cages and animals therein shall be plainly marked showing the name of the department and the staff member who is in charge of the experiments." Further, records must be maintained which "will show the type of experimentation, treatment, general health, and disposition of the animal. Adequate progress notes shall be kept up to date. On long-term experiments progress notes shall be made at least weekly. These records will be available to the inspectors from the Public Health Department." The extent to which these inspectors are able to combine helpful suggestions with firm adherence to the spirit and letter of the law will determine the degree of effectiveness of these provisions in raising standards in the use as well as the care of the animals.

One of the most serious omissions is the failure to require comfortable resting places for animals. Metal is uncomfortable to sleep on; resting boards or bedding require extra work, but this is a provision that a well-conducted experiment cannot ignore. The minimum standards are also too low in regard to size of dog cages. If a cage is only just large enough to comply with the requirement that the dog can "turn about freely and stand and lie in a natural position" it is not suitable for more than a few days; a special requirement for the size of quarters of dogs used in chronic experiments should be added.

Despite failings such as these, the shortcomings of the two Orders are less glaring by far than legis-

lation such as for example, the Hatch-Metcalf Act in New York State. Animals in the custody of humane society shelters cannot be seized; there is provision for the appointment by the Commissioners of animal protective workers to the Animal Allocation Board; and the regulations governing the care and use of the animals are better drawn. The test of these Orders will be in their administration which the AWI will observe with interest and with the hope that a beginning has been made both here and in the Guiding Principles of the American Physiological Society for the reform of cruel practices in the use of laboratory animals.

## MORE PROGRESS IN HUMANE SLAUGHTER

A most welcome development in the progress of humane slaughtering methods is the establishment of a new fellowship at the Iowa State College of Agriculture and Mechanic Arts at Ames, Iowa. The Pure Carbonic Company, a division of Air Reduction Company, Inc. of New York, founded the fellowship for the purpose of studying the anesthetization of livestock with carbon dioxide gas, prior to slaughter. It is hoped that these studies will lead to practical application by all slaughterhouses of the humane principles first put in use by the George A. Hormel & Co. of Austin, Minnesota. Hogs at the Hormel plant are carried through a carbon dioxide filled tunnel and are fully unconscious and insensible to pain when they reach the slaughtering area. Information Report Volume 2, Number 1 carried a complete account of the method characterizing it as the most important new development for the prevention of cruelty to animals in the United States in 1952. It is admirably well suited to large packing plants, enabling hogs to be slaughtered humanely at the rate of 600 per hour. However, despite the fact that use of this method results in important savings to the packer, the size of the mechanism and the capital investment necessary for the original installation have discouraged its use by small slaughterhouses. It is hoped that the new fellowship at Iowa State College will result in the development of a more compact and simpler device which would be within the reach of these small establishments. Work on the project is expected to begin early in March.

Another large packing plant which has followed the wise and humane course of arranging for the installation of the carbon dioxide tunnel is John Morrell & Co. of Sioux Falls, South Dakota and Ottumwa, Iowa. The manufacturer of the equipment is the Allbright-Nell Company, 5323 Southwestern Boulevard, Chicago 9, Illinois.

In purchasing pork products, readers of the Information Report are urged to specify their desire that the animal shall have been humanely killed.

## REQUESTS FOR "BASIC CARE OF EXPERIMENTAL ANIMALS"

Since the announcement in the November-December Information Report of the publication of "Basic Care of Experimental Animals", a manual especially prepared for the men and women who take care of laboratory animals, requests for free copies have been received from laboratories throughout the United States and Canada. That this manual is filling a long-standing need is evidenced by the many cards and letters received from scientists interested in the proper maintenance of animal colonies. Up to February 15th, communications had been received from 359 different laboratories asking for a total of 2124 copies of the manual. Further requests are invited from persons connected with experimental animals.

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The Animal Welfare Institute has followed with interest the work of two British organizations, the Laboratory Animals Bureau and the Animal Technicians Association.\* Closely allied but quite different in organizational set-up, both have proved their worth to scientists and experimental animals. The LAB is relatively small and compact. Under the able direction of Dr. W. Lane-Petter, its staff collates information on laboratory animals, operates an accreditation scheme whereby breeders are required to conform to acceptable standards, publishes technical notes on the management of laboratory animals and sponsors an annual Congress. At the 1950 Congress, the ATA was formed. It now has eight branches and a membership running into the hundreds, publishes a quarterly journal and conducts training classes. The membership is of three grades, comprising Students, Associates, and Fellows, admission to the latter two grades being by examination only. The knowledge required is well summarized in the Syllabi for Associateship and Fellowship Examinations which are reprinted on pages 3 and 4 of this Information Report.

It is not surprising that Animal Technicians who have acquired qualifications such as these are able to draw upon their knowledge and experience for the presentation of papers of high calibre on such subjects as Animal House Management; The Life Cycle of Some Common Parasitic Helminths of Laboratory Animals; Keeping Experimental Animals in East Africa; The Design and Management of Animal Colonies in Radiobiological Research; and Operations on Animals, Preparation Techniques and Post Operative Care. These are the titles of some of the papers given by Animal Technicians at the LAB Congress held in Sheffield, England, April 5 and 6, 1954. The President of the Animal Welfare Institute was privileged to attend this Congress, as well as the annual meeting of the ATA, presided over by Dr. A. S. Parkes, which followed the first day's sessions. The first American ever to deliver a paper at a LAB Congress was Dr. Hulda Magalhaes of Bucknell University, who as a part of the second day's program discussed the hamster as a laboratory animal.

Although officers of the Institute were well acquainted with the ATA through the medium of its publications, the meetings were, nevertheless, a revelation. No American who has visited any considerable number of laboratory animal colonies in this country could fail to be impressed, even astounded, by the individual and collective calibre of the British Animal Technicians. The first-rate personnel whose careful selection and training in some American laboratories has led to sound and humane animal care need take no offense at this. But the fact must be faced that far too large a proportion of their fellows in other laboratories are men whose mental and moral shortcomings, sometimes very serious in themselves, are aggravated by the lack of training and the lack of respect which is often their lot. Some American scientists contribute to this unfortunate situation while others merely suffer from it.

It would not be accurate to compare British Animal Technicians directly with the body of unskilled personnel commonly employed in this country to clean cages and feed and water the animals. From the standpoint of animal welfare, however, it is necessary to make such a general comparison coupled with an explanation of the approach of the ATA to its work. In England, Animal Technicians perform these same routine chores of animal care, and although senior members of an animal colony staff in a large laboratory may confine themselves to supervisory functions, to the more specialized aspects of the management of the colony, and to the handling of individual animals under experiment, they never underestimate the importance of the basic care of the animals, and they know exactly how to do every part of it themselves if the occasion arises. Not only do they know how in the sense of having all the necessary information at their command, but their experience has also taught them that most valuable of assets in the animal room: how to handle animals. They are, in short, both by training and inclination, "animal people."

What is the situation in the United States? In many laboratories, a stigma is attached to animal care. No one looks down on the American farmer because he feeds and waters his animals and cleans their quarters; yet the same work in behalf of smaller animals in a laboratory often arouses a different attitude altogether. Having heard the head of a world-famous research institution dismiss both animals and their caretakers as "dirty," and dismiss with equal positiveness the idea that first-rate human beings could be attracted to such work, it is only possible to conclude that brilliance in one branch of science is no guarantee of scientific open-mindedness even in closely related fields. Fortunately, most biologists do not suffer from so marked an antipathy to animals, yet lack of understanding and knowledge severely handicaps many of them where the management of an animal colony is concerned, and biologists of great personal sensitivity and humaneness not infrequently accept without question the low standards of animal care which they have come to associate with laboratory animal rooms. Too often, there is a sharp dividing line to be found where what is thought to be janitor's work ends, and where science in the form of an experimental procedure begins. The welfare of the animals involved is thus entirely overlooked.

Recognizing this, an American biologist ruefully remarked after a tour of a crowded dog room in his institution: "What we need is people to take care of the animals, not just to take care of the cages." It would be interesting to compare statistics on mortality of experimental dogs following major operations in the United States, where these animals are often used and maintained on a mass production basis, with similar statistics in British laboratories where it is usual for each dog to receive individual attention.

\*See *Information Report*, Vol. 1, No. 5 (1952)

In recent years, a hopeful development has taken place: some American laboratories have employed a veterinarian to supervise the care of their experimental animals. This has been of great value in cases where the appointee was well selected, given the necessary authority to provide comfortable quarters, and enabled to obtain suitable assistants in the animal room. It is desirable to have a qualified veterinarian, whether in private practice or on the staff of the institution, available to all laboratories using animals. It should not be supposed, however, that the mere presence of a veterinarian on the premises will provide a magic panacea for all of the multitudinous problems of animal care. If his potential value is not appreciated, he may be reduced to a position of which the following is an example. Representatives of the Institute visited the animal quarters of a large institution in the company of one of its officials and the staff veterinarian. When asked the reason for the extreme emaciation of one of the experimental animals, the veterinarian replied that he did not know. Further questioning revealed that the practice of veterinary medicine in his case is limited to inspection and immunization of animals prior to experimentation. Thus at the very time when skillful care is most needed, it is cut off, and the veterinarian is permitted to practice only on the stock animals.

Mr. A. E. Mundy, Honorary Secretary of the ATA, writing on "The Function of the Animal Technician,"\* brings out one of the greatest advantages to be gained by having a trained person, skilled in observation and the handling of animals, steadily on the job in the animal room.

"The laboratory animal is one of the essential items of equipment in biological research, biological assay and medical and veterinary diagnosis. Unlike a chemical reagent which can usually be bottled and stored without attention, the animal requires constant attention, both before as well as during use and observation. If it is to be a reliable piece of equipment, it is necessary that this attention be of a high standard.

"An analogy may be drawn with the patient in hospital. Every in-patient has to be fed, kept clean, and generally taken care of, whether or not he is undergoing treatment or observation, and this is part of the normal care for which the ward staff are responsible. Medical knowledge lays down a general routine applicable to all patients, and relies on the nursing staff to carry out without further instruction. Departures from, or additions to, this general routine may be specifically ordered, and it is essential that the nursing staff be able to interpret these orders intelligently and carry them out faithfully. What the nurse is to the hospital patient, the animal technician is to the laboratory animal. He has a further duty, to record meticulously all abnormal symptoms observed in the animals under his care, and to report them appropriately.

"The animal technician must be familiar with the requirements of normal animals, understand their behavior, and be able to detect and recognise the smallest departures from the normal. It is not his function to diagnose pathological conditions as such, but he must have a good knowledge of how such conditions may arise, and to the more usual of them he should be no stranger. In many cases the alteration of small details in maintenance routine will be sufficient to put right what has gone wrong, although a good animal technician will have corrected even a minor fault before it has time to affect his animals. He must, however, never fail to report the presence of such minor matters to his chief."

Mr. Mundy also states: "The title 'animal technician' is of recent invention, but it implies that the animal house makes technological demands comparable with those of the laboratory. No longer can the animal house staff be regarded as mere cleaners of cages and purveyors of food, nor their work a blind alley occupation, under the general supervision of the laboratory technician. Sound animal house practice demands skill and training, and the work should attract men and women of calibre equal to that of laboratory technicians. Opportunities for advancement in the laboratory and the animal house must be similar and parallel, and the division between the two fields must be a vertical one. The idea of a horizontal division, with the animal house staff below the line, and the laboratory technician above, is archaic, impractical and uneconomic."

The last speaker at the LAB Congress in Sheffield this year was a distinguished veterinarian, Professor J. O. L. King, Senior Lecturer in Animal Husbandry at the University of Liverpool. His paper will be published in a forthcoming issue of the Journal of Animal Technicians Association, and it is well worth reading. He is much in demand as an advisor to institutions whenever they encounter difficulties in the management of their animal colonies, and his practical knowledge is great. It was good to hear his reiterated emphasis on the fact that laboratory animals are living individuals and not machines. It is this understanding and appreciation and the moral character which accompanies it which must form the basis of all first-rate animal care.

## DR. ROBERT GESELL

DR. ROBERT GESELL, Chairman of the Department of Physiology of the Medical School of the University of Michigan since 1923 and a member of the Advisory Committee of the Animal Welfare Institute since its founding in 1951, died suddenly of a heart attack on April nineteenth. Dr. Gesell represented in his life and work the combination of high scientific achievement and crusading humanitarianism for which the Animal Welfare Institute stands.

His original research in the control of respiration and in neurophysiology is fully reported in the more than 150 scientific papers which he wrote, but his contributions to humane thought in general and to animal welfare in particular through the years are less widely known and deserve attention here. Outstanding among these were the talks he gave annually to students of physiology emphasizing the importance of consideration for experimental animals. The animal quarters constructed in accordance with his specifications soon after he went to the University of Michigan were designed with the comfort of experimental animals as a major consideration, and his insistence upon good care for them was thoroughly established in his department. The research which he conducted was carefully planned and humanely designed.

Never hesitating to speak out against cruelty wherever he encountered it, he was always ready to encourage kindness. One of the honors which he valued most was his appointment as Hon. Secretary for the United States of the Universities Federation for Animal Welfare of Great Britain. He gave invaluable assistance to the Humane Society of Washtenaw County, the quality and quantity of whose animal protective work has increased enormously since he first fought to help it.

\*presented at a LAB Symposium at the Royal Society of Medicine May 14, 1953.

Nor was his help limited to this single society. While efforts were being made in many parts of the country to force humane societies to break their ethical principles by compelling them to turn over animals for painful experimentation, Dr. Gesell spoke and wrote to all his fellow members of the Federation of American Societies for Experimental Biology urging them to adhere to high humane and ethical standards. Not one to use vague or ambiguous phraseology, his direct criticisms of the National Society for Medical Research, originator and sponsor of animal seizure legislation, brought considerable wrath upon his head, but he could not be intimidated. "I am enclosing a reprint on Seizure Laws presenting the opinion of the American Humane Association under attack by the National Society for Medical Research", he wrote in a circular letter to the Federation. "I call this to your attention not as a scientific paper but as a humanitarian appeal. I do this because the National Society for Medical Research appears to be making every effort to abolish our conscience." The conscience of experimental biologists as a whole was of even greater concern to him in regard to the use and treatment of laboratory animals than in the issues surrounding the procurement, and he believed that the recently issued Guiding Principles on the Care and Use of Animals, approved by the Council of the American Physiological Society, marked an important milestone in the progress of scientific ethics. He hoped and believed that work in this field would be continued by the Society whose annual meeting he attended only a few days before his death. He considered such work essential to modify a trend towards callousness in increasingly large scale animal experimentation.

Dr. Gesell's efforts in behalf of animal protection were an integral part of the broad humanitarian philosophy which motivated all his work and beliefs. The humanitarian ideals of Medicine which he prized so highly and for which he fought so outspokenly formed a basis for this thought. It can best be summed up by a quotation from the Russell Lecture which he delivered last year. "A concerted effort on the part of society to bring about greater humaneness might possibly meet the grave situation which faces it. It may, in fact, be the *only* road to salvation. In this effort, Medicine, whose sworn oath is to humanity, becomes a logical leader. And when Medicine broadens its point of view it will be best fitted to advise. It must come to appreciate the sweeping forces of evolution. It must come to recognize the fact that it is the normal healthy state of man, and not disease, that poses the major problems of civilization. It must find ways of meeting its responsibilities to society."

### SYLLABUS FOR THE ASSOCIATESHIP EXAMINATION OF THE ANIMAL TECHNICIANS ASSOCIATION

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| <p>1. Home Office regulations regarding the treatment of animals, correct labelling of cages, visits of Home Office Inspector. (See pamphlet issued by the Research Defense Society, "Notes on the Law relating to experiments on animals in Great Britain".)</p> <p>2. PHYSIOLOGY.</p> <p>(a) Reproduction:—<br/>Mammalian reproduction, excluding embryology and the development of the foetus.<br/>Gestation periods.<br/>Oestrus cycles—simple explanation.<br/>Technique of taking vaginal smears and recognition of the phases.</p> <p>(b) Circulation:—<br/>General outline of the vascular system.<br/>Structure and functions of the blood (elementary).</p> <p>(c) Excretion and respiration.</p> <p>3. The handling and sexing of common laboratory animals.<br/>The average normal temperatures of laboratory animals.<br/>The routine inspection and care of laboratory animals.<br/>The correct methods of killing laboratory animals.</p> <p>4. Methods of identification, e.g. ear punch, staining, tattooing, legbands.</p> <p>5. Simple breeding techniques for producing healthy stocks.<br/>Knowledge of the meaning of:—<br/>In-breeding, line breeding, closed colony and the Morant system.<br/>The recognition of good breeding animals.<br/>Average litter size and weights.</p> <p>6. FOOD.</p> <p>Balanced rations and requirements of common laboratory animals.<br/>Elementary knowledge of constituents of foods and accessory food factors.<br/>Methods of feeding and watering. N.B.—Contamination and cleanliness.<br/>Prevention of waste.</p> | <p>Importance and identification of green foods, Methods of storing foods.</p> <p>7. BEDDING.<br/>Sawdust, peat, woodwool, hay, shavings (good and bad samples).<br/>Storage and disposal of (a) normal and (b) infected bedding.<br/>Importance of routine cleaning and sterilising of cages.</p> <p>8. Recognition of common diseases of Laboratory Animals.<br/>Isolation, quarantine, personal hygiene.<br/>Handling of infective animals.<br/>Disinfectants and their use for cages, walls, floors, clothes and hands.<br/>Sterilising cages by autoclaving, steam and boiling water.</p> <p>9. How to recognise pests of the animal house.<br/>Precautions to be taken against Bugs, Beetles, Fleas, Lice, Wild Mice and Rats.</p> <p>10. Receiving animals from outside sources.<br/>Precautions to be taken with both animals and boxes.<br/>The difference between animals from breeders and dealers.</p> <p>11. Sending animals by train, boat, road and air.<br/>Correct methods of packing, feeding and watering for summer and winter.<br/>Export licence and veterinary certificates.</p> <p>12. How to run an animal house.<br/>Labour.<br/>Supply.<br/>Equipment.<br/>Optimum temperature and humidity.<br/>Repairs.</p> <p>13. Injections—meaning of the terms:—<br/>Subcutaneous, intra-muscular, intraperitoneal, intravenous.<br/>Correct methods of holding animals for injection and bleeding.</p> <p>14. Elementary knowledge of the care and maintenance of the larger laboratory animals, such as horses, cows, sheep, goats and pigs.</p> |
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## SYLLABUS FOR THE FELLOWSHIP EXAMINATION, A.T.A.

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| <p>1. UNDERSTANDING OF THE CRUELTY TO ANIMALS ACT OF 1876.<br/>         Legal Requirements—Procedure for obtaining licence and certificates and how to fill in application forms.<br/>         Why a licence and certificates are necessary.<br/>         Recording of Experiments and Preparation of Home Office Returns.<br/>         Labelling of cages.<br/>         (See pamphlet issued by the Research Defense Society "Notes on the Law relating to experiments on animals in Great Britain.")</p> <p>2. GENERAL PHYSIOLOGY AND ANATOMY.<br/>         Recognition of the more important organs and structures and their main functions.<br/>         Normal post-mortem appearance of common laboratory animals.</p> <p>3. ELEMENTARY KNOWLEDGE OF MICRO-ORGANISMS AND INTERNAL PARASITES<br/>         Common diseases and their control.<br/>         External parasites—Recognition and control.<br/>         Isolation and quarantine.<br/>         What prophylaxis is.<br/>         Preparation of animals for post mortem examination.</p> <p>4. TECHNIQUES FOR THE ISOLATION OF ANIMALS.<br/>         Discipline.<br/>         Precautions, e.g., personal hygiene, disinfection of rooms, clothing and apparatus.<br/>         Disposal of dead infected animals.<br/>         Disposal of used litter.</p> <p>5. PREPARATION OF ANIMALS FOR MANIPULATION<br/>         e.g., Anaesthesia, Operation, Depilation, Injection.<br/>         Post operative care.</p> <p>6. PESTS OF THE ANIMAL HOUSE.<br/>         e.g., Cockroaches, Steam Beetles, Bugs, Flies, Fleas and Mites.<br/>         Recognition, life history, haunts, method of control.</p> <p>7. FOOD INFESTATION.<br/>         e.g., Weevils, Moth, Meal Mite, Fungi.<br/>         Recognition, life history and control.</p> <p>8. NUTRITION.<br/>         General nutritional requirements of laboratory animals. Nutritional value of common feeding stuffs.<br/>         Elementary chemical composition of feeding stuffs.</p> | <p>Protein (1st and 2nd class), Carbohydrates and fats.<br/>         Composition of balanced diet—ratios of protein—fats—carbohydrates—minerals fibre and accessory food factors.</p> <p>9. BREEDING OF MAMMALS.<br/>         Methods of Breeding and selection.<br/>         Record keeping.<br/>         Gestation Periods. Oestrus cycle.<br/>         Weaning and Sexing.<br/>         Sexual Maturity.<br/>         Age for Breeding.</p> <p>10. ELEMENTARY KNOWLEDGE OF THE CARE AND MAINTENANCE OF THE LARGER LABORATORY ANIMALS.<br/>         Horses, Cows, Sheep, Goats and Pigs.</p> <p>11. BREEDING &amp; FEEDING &amp; MAINTENANCE OF FROGS, TOADS AND FISHES.<br/>         General Knowledge of Birds, Reptiles and Insects.</p> <p>12. COLLECTING SPECIMENS.<br/>         e.g., Urine, faeces, blood.<br/>         Blood smears, vaginal smears.</p> <p>13. METHODS OF DISINFECTION AND STERILIZATION.<br/>         (a) Animal houses.<br/>         Animal house equipment.</p> <p>14. ANIMAL HOUSE DESIGN.<br/>         Structure and choice of suitable materials.<br/>         Layout of rooms.<br/>         Ventilation, control of temperature.<br/>         Heating and lighting.<br/>         Drainage and water supply.</p> <p>15. ANIMAL HOUSE EQUIPMENT.<br/>         Racking and Cages.<br/>         Weighing machinery, food mixers and mincers.<br/>         Watering and feeding equipment.<br/>         Sources of supply.</p> <p>16. ADMINISTRATION.<br/>         Book-keeping, e.g., staff, animals, food and simple costing.<br/>         Prevention of waste.<br/>         Sources of supply of animals and of feeding stuffs.<br/>         The receipt, dispatch, transport and export of animals.</p> <p>17. FUNCTIONS OF THE LABORATORY ANIMALS BUREAU.</p> |
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## DISTRIBUTION OF "BASIC CARE OF EXPERIMENTAL ANIMALS"

The manual "Basic Care of Experimental Animal", published in December by the Animal Welfare Institute, continues to be available free on request to persons connected with laboratory animals. In the United States and Canada, it is now being used in 60 medical schools and 17 veterinary medical schools. In addition, requests have been received from: 104 laboratories connected with other educational institutions and foundations; 95 hospitals; 39 government operated laboratories; 103 laboratories engaged in industrial research or in the production of pharmaceuticals, and 195 libraries. Important in its foreign distribution were the requests from 88 members of the Institute of Medical Laboratory Technology, who wrote from England Scotland, Wales, Ireland, Nigeria and Southern Rhodesia, following a review in the Gazette published by the organization. Other British organizations which asked for copies for distribution include the Animal Technicians Association, the Universities Federation for Animal Welfare and the Science Technologists Association. Requests have also arrived from Finland, India, Australia, Lebanon, the Philippines and the Canal Zone.

### ANIMAL WELFARE INSTITUTE

#### ADVISORY COMMITTEE

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July - August, 1954

Vol. 3 No. 3

The procurement and housing of experimental dogs has often formed the basis of the kind of debate which has a tendency to drift into an angry exchange of passionate convictions about animal experimentation *per se*. If all laboratories using dogs would follow the lead of three of the institutions which representatives of the Institute have visited in recent months, this particular source of conflict between science and humanitarianism could soon be resolved.

Dr. William L. Sampson of the Merck Institute for Therapeutic Research at Rahway, New Jersey, Dr. R. J. Flynn of the Argonne National Laboratory at Lemont, Illinois, and Dr. Robert C. Bay of the Radiobiology Laboratory of the College of Medicine of the University of Utah, Salt Lake City, have developed programs having several praiseworthy features in common. In all of these institutions, the large majority of experimental dogs are housed in well-designed kennels leading directly to outside runways which the animals can enter at will. From two to five dogs are generally kept in each kennel-runway section. A section may also be used to house a single dog or even more than five when a mother with a large litter of pups occupies it.

Mothers with litters are common sights in these three laboratories, for all of them make a practice of breeding Beagles for use in chronic experimentation. At the Merck Institute for Therapeutic Research an especially ambitious program of breeding is now being established. In addition to the radiant-heated kennels with their outside runways which adjoin the Research Building, kennels with even better opportunities for exercise are being constructed at the Merck farm 30 miles away. Large wooden dog houses constructed on the principle of farrowing pens have been placed in the center of fenced enclosures 50' x 100' in size. The houses are insulated with double wood walls and lighted by means of a skylight. They are built on skids so that they can be moved to another location if necessary. Each house and enclosure is planned for occupancy by twenty adult Beagles; somewhat smaller pens and houses have been constructed for mothers with pups. The houses are well-bedded with straw, and it is expected that they can form year-round quarters for healthy animals. A grove of trees shades the back parts of the enclosures. The breeding program was planned in order to ensure accuracy in chronic experimentation with dogs at the Institute. Dogs of unknown background are used for acute experiments under anesthesia.

The estimated cost of bringing a pup to weaning age under the present system at Merck is \$30, excluding overhead. Adult Beagles at Argonne National Laboratory are valued at \$100. A considerable number of these are purchased from other laboratories and breeders. The relationship which becomes established between the Beagles and the men who feed and care for them, as well as with the scientists who design the experiments in which they are used, is enormously superior from a humane standpoint to that which is commonly encountered in laboratories using heterogeneous animals from dealers and pounds. The affectionate and trusting disposition of these little dogs appeals to everyone's better nature; nor is their economic value without appeal to another side of human nature when it comes to treating them properly. Accustomed from birth to institutional life, they are far better adapted to laboratory procedures than are animals previously accustomed to freedom. This is obviously desirable for scientific work, and the reduction in the amount of mental suffering is very marked where animals bred for the purpose are housed in comfortable quarters with provision for exercise at all times, the companionship of other dogs, and proper care from people whom they know and trust.

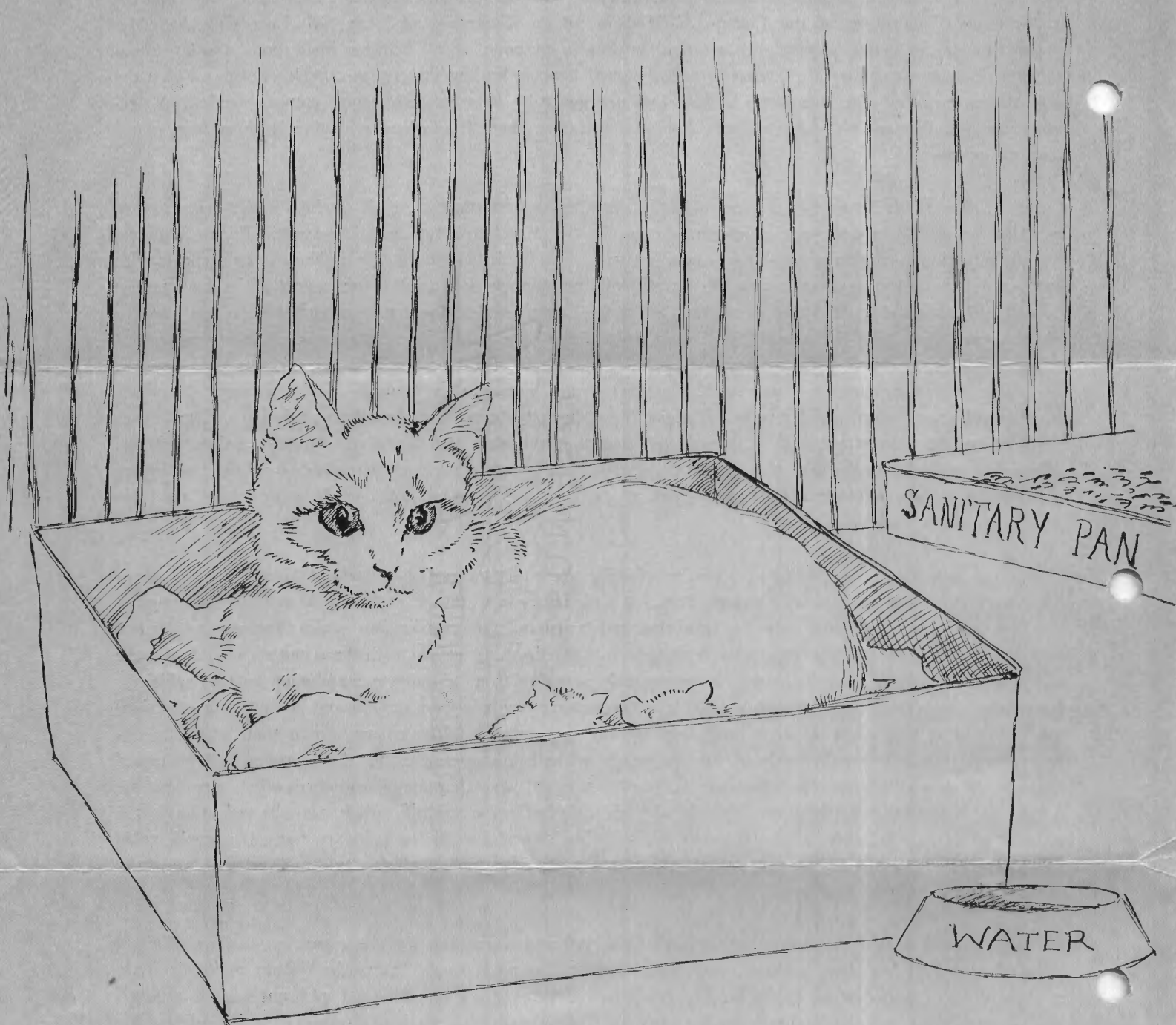
The experimental work in all three institutions referred to requires the use, from time to time, of metal metabolism cages, but dogs are not perpetually confined to these cages. After the testing period is over, it is usual for them to return to the far less restrictive and more comfortable and pleasant kennel-runways where, after their period of solitary confinement, they may again share a kennel-runway section with some of the same individuals they were raised with. At the Merck Institute, resting boards are supplied in all metabolism cages where such provision is possible. In the Radiobiology Laboratory in Utah extra-size metabolism cages are used.

At the Argonne National Laboratory, the principle of giving animals of all species adequate space for exercise, comfortable resting places, and companionship has been carried out to a considerable extent. Large, well-bedded enclosures for groups of chickens and rabbits deserve especial mention, and the animals appear to enjoy these unusually liberal laboratory quarters. Rats, mice and guinea pigs are all provided with bedding in their cages.

The considerate and practical efforts described above demonstrate that good will and sympathy towards experimental animals can do much to improve their welfare. Adequate funds for animal quarters are of course very important, but it cannot be too strongly emphasized that money alone never has and never will mitigate the lot of laboratory animals. The most expensive new research buildings employing costly construction materials and filled with budget-breaking gadgets can and do sometimes contain the most dungeon-like animal rooms.\*

The Animal Welfare Institute has collected information on the planning of animal quarters and is glad to send literature and drawing to institutions planning new buildings. In addition to the material already provided to various laboratories that have requested the services of the Institute, drawings of the animal quarters of the Radiobiology Laboratory of the College of Medicine of the University of Utah and the Merck Institute will soon be available for distribution upon request.

\*See *Information Report Vol. 2, No. 5, for an account of "Retrogression in Laboratory Animal Housing."*



Laboratory cats can be kept more healthy and contented if provided with a comfortable resting place, a sanitary pan, and fresh water. The above picture is an illustration from the Animal Welfare Institute publication, "Basic Care of Experimental Animals" 4994 copies of which have been requested by and distributed to scientific institutions since its publication in November. Free copies are still available, upon request, to persons connected with laboratory animals.

## ANESTHETIZATION PRIOR TO SLAUGHTER

A new mechanism for the anesthetization of hogs with carbon dioxide gas prior to slaughter has now been constructed and tests will begin at Iowa State College July first. It is expected that the new mechanism will supplement the one designed for large packing plants by the George A. Hormel Company so that packing plants of all sizes will be enabled to slaughter hogs humanely, as the Hormel Company is now doing at its plant in Austin, Minnesota.

New mechanisms for the use of carbon dioxide in slaughter houses are also being developed in Denmark, where a law requiring the anesthetization of animals prior to slaughter became effective on April first of this year. The captive-bolt pistol and electrical stunning devices are also in use in Denmark, as well as in Great Britain and other countries which have legislation on the stunning of animals prior to slaughter. The captive-bolt pistol is being used in some packing plants in the United States, and further information on this instrument can be obtained by writing to Koch Supplies, 2520 Holmes Street, Kansas City 8, Missouri.

Readers of the Information Report who are unfamiliar with the new Danish law requiring anesthetization prior to slaughter may be interested in knowing its text, which is as follows:

### GOVERNMENT NOTICE FOR SLAUGHTERING OF DOMESTIC ANIMALS.

In pursuance of paragraph 16, act no. 256 of May 27, 1950, about animal protection, the following statutes for slaughtering of domestic animals are herewith established:

1) In slaughtering of domestic animals they shall always be completely anesthetized immediately before the bleeding starts. Poultry may, however, be killed with a quick stroke, separating the head from the body.

2) Children less than fourteen years old must not execute slaughtering, and they must not be present at slaughtering in slaughterhouses.

3) Cases of emergency slaughtering, such as with sickness or injury of the animal, may be exempted from the above rules.

4) Anybody violating the precepts of this Government Notice will be punished in accordance with paragraph 18, piece 2 in act no. 256 of May 27, 1950, about animal protection, provided that severe punishment is not incurred in pursuance of other statutes.

5) This Government Notice comes in force from April 1, 1954.

\* \* \*

The Ministry of Justice, August 15, 1953.

\* \* \*

## A "VICTORY" IN ILLINOIS

The task of replacing the old-fashioned dog pounds with humanely operated animal shelters has been a long, slow process. Even today it is far from complete, but great progress has been made. Many humane societies have built such shelters, and they have had a wide influence in improving city-operated pounds. The old-fashioned dog pound operated on a single primitive premise: stray dogs are a nuisance to be gotten rid of. As a result, the manner of their detention and killing was often very cruel. When societies were founded which pitied the stray dog instead of blaming him, the principles of giving homeless animals good care in a shelter, of making efforts to find the former owner or a new owner for the animal, and, failing this, of killing him painlessly, were established. Is it desirable to go back to the unmitigated utilitarianism which humanitarians have struggled so long and hard to overcome in respect to animals which are homeless through no fault of their own? Those who employ legislative means to force humane society shelters back to the level of dog pounds apparently think so.

In a recent issue of its Bulletin, the National Society for Medical Research made the following announcement of "victory": "A series of amendments to the Illinois pound law went into effect on the first of this year, giving force to that measure. They had been passed through both houses of the Illinois leg-

islature at its last session (1953) without a single dissenting vote. Principal amendment is the one which places humane societies with pound contracts in the same status with regard to the law as municipal pounds." In plain English, this means that humane societies which contract with a city to handle the stray dog problem in a humane way will be forced to abandon the principles on which their charity was established. Instead of maintaining humane control over the fate of the animals which they care for, they will be obliged to hand over unclaimed dogs to laboratories for any kind of use, regardless of how painful and prolonged such experiments might be.

In 1951, when the original Illinois law referred to in the National Society for Medical Research Bulletin was passed, lengthy hearings and debate were held, to give the proper opportunity for interested citizens to express their views. As a result, the severity of the bill as proposed was modified in a number of ways. One of these was the exemption of humane societies from its provisions.

In 1953, no such hearings or debate took place. Animal welfare societies and dog owners in Illinois were unaware that any changes in the law were to be proposed. In fact, they did not learn of the change until it was announced in the NSMR Bulletin, for few humane societies are sufficiently highly organized or well-financed to keep a perpetual vigil over new bills in legislatures and therefore they are vulnerable targets for anti-humane legislation. The means employed by the proponents of the amendment were anything but direct. Legislators were not asked to repeal the humane society exemption, and only a very close scrutiny of the amendment reveals that this is what the amendment actually accomplishes.

Readers of the Information Report may want to test themselves by glancing over it. The words in italics belong to the original law; those in ordinary type which now complete the sentence constitute the new amendment. "*Humane or welfare organizations organized or which may be organized under the laws of this State shall not be construed as being within the terms of this Act*, with respect to the disposition of injured stray animals or the disposition of animals given to such organizations by their owners." The one word, "injured" is, of course, the key, since by process of elimination the uninjured stray (the classification of animals requisitioned from pounds) will now be liable to requisition from humane societies.

## THIRD ANNIVERSARY

On July 10, 1954, the Animal Welfare Institute will complete its third year of existence. The directors deeply appreciate the assistance received from individuals and groups in furthering the aims for which the Institute was founded: "To promote the welfare of all animals. To reduce the total of pain and fear inflicted on animals by man." It is hoped that many more will wish to assist in the work of the Institute during the coming year. Memberships are open to both individuals and groups, and under Section 101 (6) of the Internal Revenue Code, the Institute is classified as a tax exempt organization, which makes all dues, contributions bequests and legacies to the Institute deductible for income tax purposes.

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*Assistant Treasurer*

September-October, 1954

Vol. 3, No. 4

## HUMANE EDUCATION FOR MEDICAL STUDENTS

Three years ago, the University of British Columbia and the Vancouver Branch of the British Columbia SPCA entered into a cooperative agreement intended to serve two major purposes: 1) to advance the welfare of laboratory animals and prevent cruelty to them, and 2) to provide for painless experiments (under full anesthesia from which they are not permitted to recover) dogs which would otherwise be destroyed at the City Pound. The agreement was described, and the principles agreed to by the University were published, in Information Report Volume 2 No. 3.

An essential part of the program has been the humane education of medical students at the University, which includes an annual lecture on the humane treatment of laboratory animals by the Secretary of the SPCA. This important work has received renewed recognition in a treatise for students on human physiology recently published by the University of British Columbia Medical College, which has kindly given permission to reprint the following excerpt:

*Animal Care.* Living material will be used in many of the experiments. Care must be taken to avoid damage to delicate tissues by drying, cooling, or injury. The careful and considerate handling of animals in experimental surgery is an important part of the training of the physician. IT IS ESSENTIAL THAT ALL ANIMALS BE ACCORDED THE SAME CONSIDERATION AS A HUMAN PATIENT, and for any surgical procedure other than simple injection, the animal is to be under anesthesia or decerebrate. At the conclusion of the experiment, the animal is to be killed while still under anesthesia. BE SURE THAT THE ANIMAL IS DEAD BEFORE PLACING IT IN THE DISPOSAL PAIL.

"Dogs used for class work are unclaimed dogs obtained from the City Pound or animals from the central animal depot of the University. The arrangement with respect to pound animals is rather unique, for it was the result of a co-operative approach to the City Council by the Faculty of Medicine and the S.P.C.A. The two groups both stressed the prime concern for humane care of animals, while recognizing the importance of proper use of animals in medical teaching and research. Use of these animals is a privilege involving the same responsibilities as are involved in the case of patients in the teaching wards of the hospital."

The emphasis on humane handling prior to anesthetization, the requirement that animals be killed while still fully anesthetized and unconscious, and the emphasis on being sure that they are dead before disposal will be heartening to humanitarians. It is hoped that these principles may be adopted by all medical schools.

## NEW ANIMAL QUARTERS AT THE NATIONAL INSTITUTES OF HEALTH

Excellent provision for the housing of large animals has been made at the National Institutes of Health, Bethesda, Maryland. The new quarters, providing good outdoor exercise facilities, the opportunity for companionship, efficiency in cleaning and maintenance, and good ventilation, were designed under the supervision of Dr. W. T. S. Thorp, former Chief of the Section of Comparative Pathology and Hematology and of the Laboratory Aids Branch, and now Assistant Dean and Director of the School of Veterinary Medicine at the University of Minnesota. The quarters are well worth a visit by persons planning new accommodations for experimental animals.

Large, light rooms with radiant-heated floors and wooden benches are provided for groups of monkeys. Self-operating doors lead to outdoor exercise pens, half of which are roofed over with wire glass, the other half being open except for fencing. Quarters for chimpanzees are built on similar principles and are equipped with water-fountains which are operated by the animals themselves.

In the animal hospital section, inside kennels connecting directly with outside runways are occupied by dogs, goats and hogs. The kennels are 5 feet x 10 feet, the runways 16 and 25 feet long x 5 feet wide. These accommodations are well adapted to the needs of the various types of large experimental animals during their stay in the animal hospital and they allow for several animals to share a single section. In that part of the new animal quarters building which is designed for the housing of dogs on long-term experiments, 25-foot runways have been provided for each kennel. While under close observation by the scientist conducting the experiment, animals may be kept in the more restrictive quarters of laboratories in the various buildings of the National Institutes of Health. However, if they are to be held for long periods, they are returned to the roomy animal house section.

Because of the extreme concentration of research personnel at the National Institutes of Health and because a large proportion of the small animals are raised on the premises, the number of animal rooms is much larger than that required by other institutions. However, the principles on which they are laid out and operated are sound and are applicable to animal care routine in a single room or in a small suite of rooms. For example, the principle of non-contamination is illustrated on a large scale by the "Clean Breezeway" and the "Refuse Breezeway." Both are clean covered passages, outside and at either end of the animal building wings. Within the wings, the center corridor is used to transport clean cages, bedding and food, those on the outside to remove dirty cages and used bedding to the cage cleaning area. The possibility of transmitting infection from one group of animals to another is thus much reduced. All the animal quarters are in one-story buildings connected by covered walks.

Dr. Thorp's interest in the welfare of laboratory animals is not limited to the planning of good animal quarters but will be carried over into the field of veterinary education.

#### AIR FORCE VETERINARIANS TRAIN AT SPCA HOSPITAL

The United States Air Force, in particular the Veterinary Division of the Corps, is to be commended upon a farsighted and, incidentally, humane attitude in assigning officers for instruction in specialized care of laboratory animals. Beginning in 1953, a veterinary officer was assigned to the Angell Memorial Animal Hospital, Boston, Massachusetts for a fifteen-month period of training. This policy is being continued.

The officer receives the regular course of internship, which includes surgical preparation, surgery and after care, pathology, radiology, and modern methods of small animal medicine.

It is expected that graduated officers will be assigned to experimental laboratories conducted by the Air Force. Here the officer would not only have the care of all experimental animals in his province, but would also take part in the experimental work.

#### "COMFORTABLE QUARTERS FOR LABORATORY ANIMALS"

In response to an increasing number of requests for material useful in the planning, remodelling or re-equipping of animal quarters, the Animal Welfare Institute has prepared for distribution a loose-leaf publication containing floor-plans and pictures of enclosures, cages, and construction details which exemplify desirable features in comfortable housing for laboratory animals. The notebook, as it now stands, represents the beginning of a collection of material for the benefit of scientific institutions and the animals they house, which can be made promptly available to any institution desiring to improve its animal quarters. Previously, the Institute made individual reports in response to requests for information and recommendations. This type of individual service will continue but the new publication, entitled "Comfortable Quarters for Laboratory Animals," will help to simplify it.

Floor plans from the Universities of Utah, Michigan and Cornell, designs for individual animal house buildings from the Lister Institute, a plan from the Medical Research Council Building at Mill Hill in England, drawings of hinged benches and self-operating doors for dogs, and a variety of cages and enclosures for several species of animals are included. Emphasis is on adequate space and comfort for the animals. In some cases, material meeting all the standards of comfort and efficiency set by the Institute could not be found, and "second bests" have been illustrated. This is especially true in regard to cages, the majority of those which are currently manufactured being too small and uncomfortable. Because the Institute wishes to illustrate the best, biologists, architects, technicians and others who wish to contribute pictures and ideas for reproduction and distribution to laboratories planning changes in their animal quarters are invited to send such material to the offices of the Institute. All suggestions will be most gratefully received and, if reproduced, properly credited.

Supplements to "Comfortable Quarters for Laboratory Animals" will be sent as soon as they are prepared to all persons who have received the first material. The loose-leaf form makes such additions to the collection easy to attach. Copies will be sent free on request to any individual who desires to provide better quarters for animals in the laboratory to which he is attached or in which he is interested.

#### CORRECTION

The last issue of the Information Report was incorrectly numbered Vol. 3, No. 4. It should have been Vol. 3, No. 3.

## AN EXAMPLE OF THE VALUE OF CATERING TO SPECIES PREFERENCES

"An Experiment to Show the Effect of Strong Light on Lactating Female Rats" was reported in the Journal of the Animal Technicians Association, Vol. IV, No. 3, by R. T. Charles of the Radiobiological Research Unit, M.R.C., A.E.R.E., Harwell, Berks. In his introductory remarks, Mr. Charles told of sudden neglect of their offspring by a colony of rats moved into new animal rooms. The mortality rate for young pups being born and raised in wire cages on grid floors in a brightly lighted room was 80 per cent. The grid floors were removed and a bedding of sawdust substituted; some privacy was provided by substituting sheet metal sides to the cages; and, finally, the blinds were drawn and the rat-room kept in semi-darkness during daylight hours except when maintenance routines were being carried out. As a result of these changes, of which the darkening of the room appeared to be the most important, the mortality of young pups was reduced to less than one per cent.

Although good maintenance of experimental animals in accordance with the preferences and needs of different species is not always reflected in so dramatic a way as the reduction of mortality by 79 per cent, good care which takes into account the comfort and the feelings of the animals is almost invariably worthwhile from a practical as well as an ethical standpoint. Mr. Charles' experimental findings will be of value to everyone who keeps a rat colony. He states: "The present paper reports the result of an effort to show experimentally that strong light was a factor influencing the rearing of litters." The research design and procedure and results are reprinted on page four.

An interesting comment on his report was made by Patricia Woodhead, Pharmacology Department, British Schering Research Institute, Alderley Edge, Cheshire. It was published in Vol. V, No. 1 of the ATA Journal. Miss Woodhead stated that the detrimental effect of strong light was an important point of which she has been aware and gave the following account of the way the matter has been solved in her animal room:

"Our cages receive direct light by day from the windows on both sides of the animal house and artificial light from overhead bulbs. Pregnant and lactating rats do not like the light and always seek the darkest corner of the cage: as it is not practical to reduce the light, darkness and privacy are provided by small light wooden boxes, Figure 1 with detachable lids. One of these with bedding of fine hay, wood wool, and torn up newspaper, is placed in each cage after the rat has been mated, which gives her ample time to get used to it. The cages are changed twice a week and a clean box put in, until the young are born. The cages continue to be cleaned twice a week, but the box containing the young rats is transferred, and the bedding not renewed, until they are about 14 days old, after which the boxes are cleaned twice weekly until the rats are weaned. When the cage is cleaned the box is lifted out, thus leaving the nest undisturbed. The mother is removed first, having been enticed away from the box, and she is put in a container until the work is finished. She is then replaced and, except for a little natural excitement, apparently does not object to this treatment. Most female rats will alter the position of the box themselves after cleaning operations have been completed. Some young rats have been weighed individually from birth, being handled with forceps and placed on the scales on warm cotton wool.

*There are small wooden blocks on the four walls on which the lid rests; this does away with the necessity for hinges. The lid must fit flush with the top, otherwise the rat may remove it.*

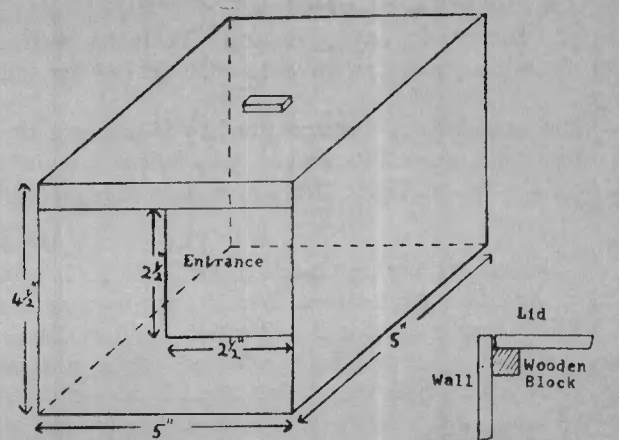


FIGURE 1.

"The boxes are scrubbed out with hot water and disinfectant, which discourages the rats from gnawing the wood, and are dried thoroughly before use. Our rats are given unlimited fresh water and are fed on Diet 41, plus some small tit-bit each day. This consists of whatever there is available, a piece of carrot, a boiled potato, greenstuff, etc., which is helpful in keeping the animals tame and easy to handle.

"I have reared many litters this way and never have the young been neglected or eaten by the mother, and any deaths there may have been have occurred after weaning."

*Excerpts from an Experiment to Show the Effect of Strong Light on Lactating Female Rats*

RESEARCH DESIGN AND PROCEDURE

The research design employed in the present study is presented in Table I. The subjects were selected at random from the laboratory population, and treated identically except for the differences required by the research design.

TABLE I  
RESEARCH DESIGN

Group	N	Phase		
		1	2	3
A	3	Unshielded	Unshielded	Shielded
B	3	Shielded	Shielded	Unshielded

TABLE II  
Results

Litter No.	Group A.		Group B.	
	No. of pups born	No. of pups reared	No. of pups born	No. of pups reared
1	33	10	34	32
2	42	39	42	40
3	37	19	40	17

This design enabled two hypotheses to be tested. First, that direct light was detrimental to the rearing of litters. Second, that previous exposure of the female to strong light was detrimental to the rearing of subsequent litters.

B. Apparatus.

The cage employed to shield the female rat from direct light, consisted of a box shaped galvanised iron cage, with two sides, back, and top of the cage made of sheet metal. A hinged door, made of straight wire rods, was fitted to the front of the cage. The cage was placed on a rack with the front projecting into the room, the rest of the cage providing a shield from direct daylight at the rear of the cage.

The grid of the cage was removed, and the rat produced and reared her young on a bedding of sawdust, ample wood wool being provided for nest building.

The stock cage, previously described, was used for the unshielded group of rats.

C. Subjects.

Six female Wistar albino rats were used as subjects. All animals were approximately 110 days old at the beginning of the experiments. They were maintained *ad libitum*, on rat cakes (Thomson cube) as manufactured by the N.E. Co-op. Aberdeen, supplemented by whole-meal bread, plus Marmite and cod-liver oil once a week. A plentiful supply of fresh water was always available.

D. Procedure.

1. On the 7th April each female was mated with a litter mate. Animals in Group B were shielded from direct light, on the day of mating. The males were removed after a period of fourteen to sixteen days from the date of mating. Litters were born during the early part of May, and were weaned at twenty-one days of age.
2. The second litters were obtained by following a similar procedure as above. These were born during July.
3. The same general procedure was followed for the third litters, except that Group A was now shielded and Group B exposed. These litters were born in September.

RESULTS

The results are summarised in Table 2. It will be noted that each female conceived and produced three litters, and that the total number of pups born to each group was approximately the same.

Yates exact test for 2 x 2 tables (Fisher, 1948) shows a difference between the number of pups reared in shielded and unshielded conditions, which is significant at better than the 0.001 level of confidence.

Further analysis shows that there is no significant improvement in the third litters of Group A. This would suggest that exposure of the female to strong light would affect the rearing of a litter born at some later time in shielded surroundings.

Similar analysis of Group B shows a highly significant difference between litters 1 and 2 and the third litters.

ANIMAL WELFARE INSTITUTE

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The bronze medal honoring Dr. Albert Schweitzer, world-famous physician and humanitarian, is pictured below. Nominations for possible recipients of the medal may now be sent to the offices of the Animal Welfare Institute. A form for making such nominations is being enclosed with each copy of this Information Report. Additional copies may be had on request, and all readers are cordially invited to submit suggestions.

### THE SCHWEITZER MEDAL



The Institute desires to make the first annual award of this medal, together with \$500, in recognition of an outstanding contribution by a research scientist to the reduction of laboratory animal suffering. A major aim of the Institute is: TO FOSTER DEVELOPMENTS IN EXPERIMENTATION WHEREBY ANIMAL SUFFERING MAY BE MINIMIZED.

The following fields of investigation were suggested in the booklet published in October, 1951, outlining the aims of the Institute:

- a) Practical replacement of the higher mammals by much lower forms of life or life in lower stages of embryonic development (such as chick embryos) with a view to reducing the suffering undergone by animals with highly developed nervous systems.
- b) Practical replacement of chronic experiments involving protracted physical or mental suffering by properly conducted experiments with a view to reducing the number of painful experiments.
- c) The efficient statistical design of experiments so as to effect a systematic economy in sampling. For example, methods whereby limitation of the number of variables introduced in an experiment makes possible the reduction of the number of animals necessary.
- d) The substitution of chemical and physical methods, whenever possible, for biological methods in experiments or tests.
- e) The means of avoiding unnecessary repetition of experiments.

A gold replica of the medal bearing the words "Animal Welfare Institute presentation to Albert Schweitzer in whose honor this medal was created" was given to Dr. Schweitzer on November 3 in Oslo, Norway, where he had gone to receive the Nobel Prize for Peace.

The presentation on behalf of the Institute was made by Dr. Charles R. Joy, a close friend of Dr. Schweitzer's, who is, like Dr. Schweitzer, a minister and a man of letters actively engaged in good works. He is the editor of "The Animal World of Albert Schweitzer" and many other books. It was between assignments in Korea and Africa on behalf of CARE that he was able to stop in New York and Oslo and to present the medal whose design was inspired by a photograph he took of Dr. Schweitzer at his hospital in Lambaréné, French Equatorial Africa. Writing of his acceptance of the medal, Dr. Joy said, "Dr. Schweitzer was deeply moved and said that nothing else could have given him more pleasure."

The Animal Welfare Institute is both grateful and proud to have been able to please so great a champion of kindness and the protection of animals. The Institute hopes that the spirit of his philosophy, "Reverence for Life", will become more and more widespread among those who use experimental animals and his plea always kept in mind that they "should never quiet their consciences with the conviction that their cruel action may in general have a worthy purpose. In every single instance they must consider whether it is really necessary to demand of an animal this sacrifice for man, and they must take anxious care that the pain be mitigated as far as possible."

#### AHA CONVENTION: CONTINUED OPPOSITION TO ANIMAL SEIZURE DEMAND FOR HUMANE METHODS OF SLAUGHTER

Three extremely well qualified humanitarians were elected to the American Humane Association's board of directors at its annual convention, October 25-28, 1954, in Atlanta, Georgia. As they have been doing regularly ever since the threat of animal seizure legislation arose, the delegates to this convention again expressed themselves strongly in opposition to legislation which seeks to compel humane societies to abandon ethical principles by turning over animals to laboratories for use in painful experimentation. To guarantee solidarity, the delegates requested the resignation of any director not in accord with the AHA's official policy of opposition to animal seizure. None resigned. Candidates for election were requested to state their position on this subject, and the three new directors all expressed unequivocal opposition to seizure legislation.

Many delegates to the convention received a shock to their pride as members of the organized humane movement in this country when they learned that, with respect to humane slaughter, the United States is far behind England, Scotland, Northern Ireland, New Zealand, Holland, Switzerland, Finland, Norway, Denmark and Sweden. In all of these countries, the law requires that animals be humanely killed. A second more severe shock was felt by the delegates when they saw a film depicting the present method used for slaughtering hogs in the majority of abattoirs on this continent. Mr. Alfred P. Redman of Seattle, Washington, produced the film and presented a scholarly address on problems relating to the advancement of humane slaughter in this country. Copies of this highly informative paper will be available shortly by writing the American Humane Association, 896 Pennsylvania Street, Denver 3, Colorado.

Dr. C. D. Van Houweling of the United States Department of Agriculture gave a clear summary of the work of the Agricultural Research Service and Mr. R. F. Hausen presented other phases of the slaughtering problem.

A copy of the Redman film was immediately purchased by the Animal Welfare Institute, and is now available on loan from its office at no cost except the shipping charges. Copies of the film may be purchased from Mr. Redman, (1507 Ravenna Boulevard, Seattle 5, Washington) at a cost of \$25 plus shipping charges.

The Institute's copy of the film was put to use promptly when the Federation of Humane Societies from four adjoining States held a meeting in Washington, D.C. on November 29th, dedicated entirely to the subject of humane slaughter. The Federation discussed the three practical methods—the electrical stunning tongs, the captive bolt pistol (used by the Oscar Mayer Company, Madison, Wisconsin), and the carbon dioxide chamber (used by George A. Hormel & Co., Austin, Minnesota)—as well as the most effective means of obtaining their adoption by every packer in the country. Plans are currently being made for the production of a second film showing these humane methods of slaughter, and concerned activity in this long neglected field can at last be expected. All readers of the Information Report are requested to assist by **demanding** and **purchasing** humanely killed meat.

## ANNUAL REPORT

The third annual report of the Animal Welfare Institute, which includes a summary of the Information Reports published during the year, was distributed to members prior to the annual membership meeting on October 15, 1954. Anyone desiring a copy may obtain one by writing to the offices of the Institute, 350 Fifth Avenue, New York 1, New York.

### IMPROVEMENTS IN HOUSING LABORATORY ANIMALS

A new building for large animals at the Emory University School of Medicine, Atlanta, Georgia, is nearing completion, and representatives of the Institute were pleased to see that it provides roomy indoor kennels connecting directly with outdoor runways to which the animals may go at will. The kennels will be provided with resting boards for the comfort of the dogs and monkeys to be housed. Credit for the humane and sensible planning of these quarters goes to a group of biologists at the University of whom Dr. James L. Morrison, chairman of the committee on animals, was a leading member. It is with great regret that the Institute must announce the sudden death from heart failure of Dr. Morrison only a few days after he had sent the plans of the new animal quarters to this office for inclusion in the publication "Comfortable Quarters for Laboratory Animals". Dr. Morrison, whose sympathetic interest in the welfare of experimental animals was of a quality greatly to be desired in all similar institutions, made arrangements prior to his death to provide resting boards in all metal dog cages so that the animals would not have to lie on uncomfortable metal mesh. He also sought to assist the Institute in the initiation of a project whereby films might be substituted for live animals in demonstrations to students in cases where animal suffering might thereby be spared.

A new supplement to the loose-leaf notebook "Comfortable Quarters for Laboratory Animals", which was announced in the last issue of the Information Report, is being prepared and will include new material relating to monkeys, guinea pigs and mice in addition to the plans of the new Emory University animal house. Laboratories in 18 States, the District of Columbia, Hawaii and five foreign countries have already requested copies for use in remodeling, re-equipping, or planning of new animal quarters. The publication and subsequent supplements may be obtained without charge by writing to the office of the Institute.

### A BRITISH AUTHORITY EVALUATES THE LAW

Dr. William Lane-Petter is well known to British scientists as the Director of the Laboratory Animals Bureau, an organization which has made great progress in providing better-bred, healthier and better-cared-for animals for laboratory use. Not only has the Bureau itself done an enormous amount of active work in raising standards among breeders and in preparing numerous publications of value to experimental biologists, but the interest which it inspired led to the establishment of a second extremely valuable organization, the Animal Technicians Association, which has developed a body of well-trained, intelligent and humane men and women to manage animal colonies in British laboratories.

Last year, at the annual meeting of the Animal Care Panel at the University of Chicago, Dr. Lane-Petter delivered a paper entitled "Animal Experimentation in Great Britain" which included a full account of these activities together with other information well worth reading by everyone interested in the subject. The 1953 Proceedings of the Animal Care Panel (\$2.00) may be obtained by writing to Dr. Robert J. Flynn, Division of Biological and Medical Research, Argonne National Laboratory, Lemont, Illinois.

Printed below is one section of Dr. Lane-Petter's paper, that dealing with the law in Great Britain.

#### THE LAW IN GREAT BRITAIN

No account of animal experimentation in Great Britain would be complete without a reference to the law operating in that country, and with its effects.

In 1870 a committee of the British Association for the Advancement of Science was instructed to examine the conduct of painful experiments on animals, especially in relation to their degree of painfulness, and the discouragement of those which were not clearly legitimate. Their report was a statement of scientific and ethical principles with which no reasonable person would quarrel, and which govern the conduct of experiments on live animals today in every civilized country.

About the same time the anti-vivisection movement was getting under way. In 1875 a Royal Commission was appointed to consider the whole question of animal experiments. Needless to say, the Royal Commission's findings failed to support the lurid and mischievous allegations of cruelty directed against scientists, but nevertheless the following year, 1876, an Act of Parliament was passed, called the Cruelty to Animals Act, which laid down certain conditions governing animal experiments. I will not weary you with the details of this Act, beyond saying that it provided for a system of personal licensing for those who wished to experiment on living vertebrate animals, and of registration of premises where such experiments were to be conducted; and for inspection by government inspectors. It also provided that a licensed person working under the Act could not be prosecuted for alleged cruelty without the written permission of the Secretary of State, permission which he has so far never felt justified in granting. The effect of this is to protect scientists from malicious litigation.

On the whole the Act has been a good one, despite certain clumsy administrative points. If it has, through the machinery of licensing, added a paper burden to the scientists, it has also held an umbrella over his head. But form-filling, even today, is a trifle, not worthy of lost sleep. The much more serious question is: has the Act, which places a powerful veto in the hands of a government department, hindered scientific advance?

Practically all who have worked under the Act would answer no. At the worst it has been a nuisance, but rather in the sense of having to pay an insurance premium. At the best, it has given effect to that principle first put forward by scientists themselves, that there are limits to the legitimacy of painful experiments on animals.

One of the greatest crimes of the anti-vivisectionists is that, by attacking animal experimentation on principle, they have compelled scientists to condone, on principle, what may have been ethically questionable. Now this is a serious consequence of emotions run riot. Fortunately today the vivisection controversy is, at least in Great Britain, moribund; the cult will, no doubt, continue, but it no longer cuts much ice. Medical and veterinary science, with the aid of its guinea pigs, mice, rats, dogs and the rest of them, has made such startling progress in recent years that to tell the story is to convince all but the irreconcilable. And this is having a very encouraging result, for we can now see who are the real benefactors of animals. They are not the anti-vivisectionists, whose immoral propaganda had made suspect the very phrase animal welfare. No, they are the scientists who have to do with animals, who understand their needs, and who can admit that the use of animals in the course of experimental work carries with it an obligation of humanity towards those animals. The British Research Defence Society, like the American National Society for Medical Research, whose first function was to combat the antivivisectionists, can now take a more positive attitude and state that the proper care of animals is not only scientifically desirable but an ethical obligation.

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