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HUMANE TREATMENT OF ANIMALS USED IN RESEARCH

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

EIGHTY-SEVENTH CONGRESS

SECOND SESSION

ON

H.R. 1937

A BILL TO PROVIDE FOR THE HUMANE TREATMENT OF ANIMALS USED IN EXPERIMENTS AND TESTS BY RECIPIENTS OF GRANTS FROM THE UNITED STATES AND BY AGENCIES AND INSTRUMENTALITIES OF THE U.S. GOVERNMENT AND FOR OTHER PURPOSES

H.R. 3556

A BILL TO PROVIDE FOR HUMANE TREATMENT OF ANIMALS USED IN EXPERIMENT AND RESEARCH BY RECIPIENTS OF GRANTS FROM THE UNITED STATES, AND BY AGENCIES AND INSTRUMENTALITIES OF THE UNITED STATES, AND FOR OTHER PURPOSES

SEPTEMBER 28 AND 29, 1962

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HUMANE TREATMENT OF ANIMALS USED IN RESEARCH

FRIDAY, SEPTEMBER 28, 1962

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HEALTH AND SAFETY OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:15 a.m., in room 1334, New House Office Building, Hon. Kenneth A. Roberts (chairman of the subcommittee) presiding.

Mr. ROBERTS. The subcommittee will please be in order.

The Subcommittee on Health and Safety is meeting this morning for hearings on H.R. 1937, by Mrs. Griffiths, and H.R. 3556, by our colleague on the Committee on Interstate and Foreign Commerce, Mr. Moulder of Missouri.

These bills provide for the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies or instrumentalities of the U.S. Government.

These bills attracted a great deal of interest throughout the country. For some time we have been trying to work out a schedule for hearings on these bills but, as it is well known, the Committee on Interstate and Foreign Commerce has been very busy this session with legislation on transportation, communications, health, war claims, drugs, and other subjects.

We have just now had an opportunity to hold hearings on these bills. We have witnesses here to explain the purpose and need for this legislation and I shall not go into further detail.

Without objection, copies of the bills and agency reports will be inserted in the record at this point.

(The documents referred to follow:)

[H.R. 1937, 87th Cong., 1st sess.]

A BILL To provide for the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies and instrumentalities of the United States Government, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is declared to be the policy of the United States that living vertebrate animals used for scientific experiments and tests shall be spared unnecessary pain and fear; that they shall be used only when no other feasible and satisfactory methods can be used to ascertain biological and scientific information for the cure of disease, alleviation of suffering, prolongation of life, the advancement of physiological knowledge, or for military requirements; and that all such animals shall be comfortably housed, well fed, and humanely handled.

SEC. 2. From and after January 1, 1962, no grant for scientific research, experimentation, testing or training, and no advance or payment under any such grant, shall be made by or through any agency or instrumentality of the United

States Government, or by or through any person or agency pursuant to contract or authorization of the United States Government, to any person who uses live animals in research, experiments, tests or training unless the person applying for or receiving the grant has a certificate of compliance with this Act, issued by the Secretary of Health, Education, and Welfare.

SEC. 3. The Secretary shall, pursuant to such rules and regulations as he may prescribe, issue certificates of compliance to persons applying therefor upon proof satisfactory to him—

(a) that the applicant's proposed methods and procedures involving the use of live animals are in accordance with the requirements of this Act and the policy of the Congress;

(b) that the applicant's personnel and facilities are adequate and appropriate to enable it to comply with the requirements of this Act and the policy of the Congress stated herein; and

(c) that the applicant has complied or is equipped to comply with the requirements of section 4 of this Act.

SEC. 4. Each person to whom a certificate of compliance has been issued, and each agency or instrumentality of the United States which uses live animals for research, experiments, tests or training shall comply with the following requirements:

(a) All premises where animals are kept shall provide a comfortable resting place, adequate space and facilities for normal exercise, and adequate sanitation, lighting, temperature control and ventilation;

(b) Animals shall receive adequate food and water and shall not be caused to suffer unnecessary or avoidable pain through neglect or mishandling;

(c) Animals used in any experiment which would result in pain shall be anesthetized so as to prevent the animals feeling the pain during and after the experiment except to the extent that the use of anestetics would frustrate the object of the experiment, and in any event, animals which are suffering severe and prolonged pain shall be painlessly killed. Unless the project plan on file with the Secretary specifies a longer period during which animals must be kept alive for essential purposes of the experiment or test, consistent with this Act and the rules and regulations hereunder, animals which are seriously injured as a result of the experiment shall be painlessly killed immediately upon the conclusion of the operation inflicting the injury;

(d) An accurate record shall be maintained of all experiments and tests performed. Procedures shall be employed to make possible the identification of animals subjected to specified experiments and tests, and a record shall be kept of the disposition of such animals;

(e) All cages or enclosures containing animals shall be identified by cards stating the nature of the experiment or test, or numbers which correspond to such a description in a record book;

(f) Painful experiments or tests on living animals shall be conducted only by persons licensed under section 5 of this Act or by students in an established training institution who are under the direct supervision of a licensee and all animals used by the students in practice surgery or other painful procedures shall be under complete anesthesia and shall be killed without being allowed to recover consciousness;

(g) No experiment or test on living animals shall be undertaken or performed unless a project-plan is on file in such form as the Secretary may prescribe, describing the nature and purposes of the project and the procedures to be employed with respect to living animals;

(h) An annual report and such additional reports or information as the Secretary may require by regulation or individual request shall be submitted to the Secretary. The annual report shall specify the number of animals used, the procedures employed, and such other matters as the Secretary may prescribe, and shall include a copy of any published work prepared or sponsored by the reporting person or agency, involving the use of live animals; and

(i) Authorized representatives of the Secretary shall be given access to the animals and to the premises and books and records of the agency or person for the purpose of obtaining information relating to the administration of this Act, and such representatives shall be authorized to destroy or require the destruction of animals in accordance with rules, regulations, or instructions issued by the Secretary, in conformance of this Act.

SEC. 5. For purposes of this Act the Secretary shall license individuals to engage in experiments or tests upon their submitting an application in such form as the Secretary shall prescribe, if the Secretary is satisfied that such individuals are qualified for such purposes.

SEC. 6. If the Secretary shall at any time determine that any agency or instrumentality of the United States has not complied with the requirements of this Act, he shall forthwith notify the head of said agency or instrumentality, and if such noncompliance is not corrected to his satisfaction within thirty days after notice is served, he shall give public notice of such noncompliance.

SEC. 7. The Secretary is authorized and directed to adopt and issue rules, regulations, procedures, and orders to carry out the provisions and purposes of this Act.

SEC. 8. The Secretary shall, subject to such terms and conditions as he may specify, suspend or revoke any certificate of compliance issued pursuant to section 3 of this Act, or any license issued pursuant to section 5 thereof, for failure to comply with any provision of this Act or the policy of the Congress stated herein, upon notice by registered mail to the holder thereof. Such notice shall set a time within which the holder may apply for reinstatement pursuant to such procedures as the Secreaary may prescribe. A copy of any notice of suspension or revocation of a certificate of compliance shall be sent to all agencies which are considering or have made a grant to the holder of the certificate, and no grant or payment under a grant shall be made to any person whose certificate is suspended or revoked to the extent that the Secretary's order shall provide for the purpose of obtaining compliance with this Act.

SEC. 9. The Secretary shall refuse to accept any project-plan for filing under the provisions of subsection (g) of section 4 of this Act, or may strike any project-plan from filing if he determines that it does not conform with any provision of this Act or of the rules, regulations, procedures, and orders issued pursuant to this Act, or any of the purposes stated herein. The Secretary shall notify the person filing the project-plan of his refusal to accept it for filing or of his action in striking the plan from filing, and his action shall be effective upon notification: *Provided*, That the Secretary shall provide a reasonable opportunity for the person filing such project-plan to submit its justification thereof pursuant to such procedures as the Secretary may prescribe.

SEC. 10. The term "person" as used in this Act includes individuals, institutions, organizations, corporations, and partnerships.

[H.R. 3556, 87th Cong., 1st sess.]

A BILL To provide for humane treatment of animals used in experiment and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is declared to be the policy of the United States that animals used in experiments, tests, the teaching of scientific methods and techniques, and the production of medical and pharmaceutical materials, shall be spared avoidable pain, stress, discomfort and fear, that they shall be used only when no other feasible and satisfactory method can be used to obtain necessary scientific information for the cure of disease, allevation of suffering, prolongation of life, or for military requirements, that the number of animals used for these purposes shall be reduced as far as possible, and that all animals so used shall be comfortably housed, well fed, and humanely treated.

SEC. 2. As used in this Act, the following terms shall have the meanings here set forth:

(a) "Animal" shall mean any living creature of any vertebrate species and of any other species capable of developing a conditioned response;

(b) "Stress" shall mean the effect of any condition of housing, diet, climate, confinement, care or use, unsuitable to the species or to the particular animal, or differing from its ordinary and normal mode of life, to a degree which produces physical deterioration in any respect or markedly a typical conduct or reaction, or which, if prolonged, would have a tendency to produce either of the above aberrations from normal condition or reaction;

(c) "Pain" shall mean any sensation which, if felt by a human being, a competent and conscientious physician would ordinarily take steps to relieve, by anesthesia, sedation, nursing care, or otherwise;

(d) "Substitution" shall mean the use in any research project, test, demonstration, or production procedure of a less highly developed species of animal for species more highly developed, the development to be evaluated on the basis of the brain and nervous system of the species, in terms of its elaboration and sensitivity to pain;

(e) "Reduction" shall mean the use of a reduced number of animals, by means of the application of statistical techniques, use of insentient material or models, or any other method;

(f) "Person" shall mean an individual person;

(g) "Laboratory" shall mean any school, institution, organization, group, corporation, partnership, or person that uses or intends to use animals in research, tests, experiments, teaching, or the production of materials.

SEC. 3. There is hereby established in the executive branch of the United States Government an Agency for Laboratory Animal Control, hereinafter sometimes called the Agency. The Agency shall be headed by a Commissioner of Laboratory Animal Control, who shall be appointed by the President of the United States, with the approval of the Senate, for a period of five years or until such time as the Commissioner shall resign or be incapable of fulfilling his duties, in which event the President shall appoint a new Commissioner for a period of five years. To be eligible for appointment as Commissioner, a candidate must have been admitted to practice law in the Supreme Court of the United States. No person who is or has ever been connected with any laboratory shall be eligible for appointment as Commissioner. The Commissioner shall receive the same remuneration and allowances as a judge of the United States circuit court of appeals and shall not be removable during his term of office save on such grounds as would constitute grounds for impeachment or removal of such a judge. A Commissioner may be reappointed, with the consent of the Senate.

SEC. 4. From and after January 1, 1962, no agency or instrumentality of the United States shall use any animal for research, experiments, tests, training in scientific or technical procedures, or production of materials unless the agency or instrumentality has been granted a certificate of compliance with this Act, issued by the Commissioner for Laboratory Animal Control.

SEC. 5. From and after January 1, 1962, no agency or instrumentality of the United States shall make any purchase from any laboratory unless the laboratory holds a certificate of compliance with this Act, issued by the Commissioner for Laboratory Animal Control.

SEC. 6. From and after January 1, 1962, no grant of money for research, experimentation, testing, or training in scientific procedures or techniques, or the production of medical or pharmaceutical material, and no advance or payment under any such grant, shall be made by or through any agency or instrumentality of the United States, or by or through any person or agency pursuant to contract or authorization of the United States Government, to any laboratory or person using animals in research, experiments, tests, or training in scientific procedures and techniques, unless the laboratory or person applying for or receiving the grant has a certificate of compliance with this Act, issued by the Commissioner for Laboratory Animal Control.

SEC. 7. The Commissioner shall issue no certificate of compliance until he has received proof, satisfactory to him, that—

(a) that applicant laboratory's personnel and facilities are adequate to enable it to comply with the requirements of this Act and the policy of the United States, and

(b) projects planned by the applicant laboratory will be conducted in accordance with the policy of the United States and with the requirements of this Act.

SEC. 8. No certificate of compliance shall be issued by the Commissioner unless the laboratory applying for such certificate shall have agreed, in writing, that authorized representatives of the Commissioner and law enforcement officers of the State in which the laboratory operates shall be given access at any time to the animals, premises, and records of the laboratory, for the purpose of obtaining information relevant to the administration and enforcement of this Act and of State laws.

SEC. 9. No use of animals shall be undertaken by any holder of a certificate of compliance with this Act until a project plan has been filed with the Agency of Laboratory Animal Control in such form as the Commissioner shall prescribe, describing the nature and purposes of the project and the procedures to be employed with respect to living animals, and the project plan has been approved

by the Commissioner. The Commissioner may refuse to approve a project plan for failure to comply with this Act and the policies enunciated herein.

SEC. 10. The Commissioner shall upon application issue a letter of qualification to use animals in research to persons having all of the following qualifications:

(a) the applicant has been awarded a doctoral degree in medicine, veterinary medicine, physiology, psychology, or zoological science by an accredited university or college;

(b) the applicant has never been convicted of cruelty to animals or been found by the Commissioner to have participated knowingly in a violation of this Act;

(c) the applicant is at the time of application employed or sponsored by a laboratory holding a certificate of compliance with this Act, or has applied for or received a grant of funds from an agency or instrumentality of the United States or from a person or agency acting pursuant to contract or authorization of the United States Government, for research involving use of animals, or is in the employ or service of an agency or instrumentality of the United States.

SEC. 11. Letters of qualification authorized in section 10 shall be valid for no more than one year and may be limited to a shorter time and to specific projects by the Commissioner, but shall be renewed by the Commissioner if renewal is requested, subject to the requirements for an original letter of qualification.

SEC. 12. Every laboratory holding a certificate of compliance, and every agency or instrumentality of the United States that uses animals in research, experiments, tests, training in scientific procedures or technique, or the production of materials, shall comply with the following requirements:

(a) all projects shall be designed and executed so as to obtain maximum reduction and substitution;

(b) animals used in any way that would cause pain shall be anesthetized so as to prevent the animals from feeling pain during or after the experiment or procedure unless the project plan approved by the Commissioner states that anesthesia would frustrate the purpose of the project;

(c) no unanesthetized animal shall be burned, scalded, or subjected to perforation of the abdominal viscera, or to any similarly acutely painful procedure;

(d) regardless of the nature or purpose of any experiment or procedure, animals that would suffer prolonged pain or stress as a result of an experiment or procedure shall be painlessly killed immediately after the procedure causing pain or stress is completed, whether or not the objective of the experiment or procedure has been attained;

(e) animals used in surgery or other procedures causing pain or stress shall be given pain-relieving care and convalescence conditions substantially equal to those customarily or usually given to human patients before, during, and after similar procedures;

(f) anesthetics shall be administered only by a licensed veterinarian or a doctor of medicine qualified in anesthesiology, except that a student in a graduate medical school may do so for purposes of training when in the presence and under the immediate supervision of a licensed veterinarian or doctor of medicine;

(g) experiments or tests on animals shall be conducted only by persons holding letters of qualification under section 10 of this Act, or by students in a laboratory holding a certificate of compliance with this Act when in the presence and under the direct supervision of a person holding a letter of qualification under this Act, and all animals used by students in practice surgery or other painful procedures shall be under the complete anesthesia and shall be killed without being allowed to recover consciousness;

(h) all animals used shall be legally acquired and shall be kept only in conformance with the laws of the State in which the laboratory operates;

(i) all premises where animals are kept shall provide a comfortable resting place, adequate space and facilities for exercise normal to the species, sanitary and comfortable cleanliness, and lighting, temperature, humidity, and ventilation appropriate to the species;

(j) animals shall receive food and water adequate to maintain health and comfort and shall not be permitted to suffer pain or stress through neglect or mishandling;

(k) an accurate record shall be maintained of all experiments and procedures performed and the records shall be in such form as to make possible the identification of animals subjected to specified experiments and tests, and a record shall be kept of the disposition of all animals;

(l) all cages or enclosures containing animals shall at all times be identified by cards stating the nature of the experiment or test in progress;

(m) an annual report and such additional reports or information as the Commissioner may require by regulation or individual request shall be submitted to the Commissioner. The annual report shall specify, for each project plan previously filed and approved, the number and species of animals used, the procedures employed, the sources from which all animals were acquired, and such matters as the Commissioner may prescribe, and shall include a copy of any published work prepared or sponsored by the reporting person or laboratory, involving the use of animals;

(n) all applications for certificates of compliance with this Act, project plans, and required reports to the Agency of Laboratory Animal Control or the Commissioner thereof, shall be certified by all persons holding letters of qualification under section 10 of this Act who participate in the relevant experiments or procedures and in the case of an organization, institution, school, or corporation, shall also be certified by the chief executive officer of the organization, institution, school, or corporation. All applications and reports shall be made in such form as to subject the makers of false statements to the penalties of perjury.

SEC. 13. The Commissioner shall not approve any project plan for the use of animals if he determines that procedures contemplated by the plan would violate any provision of this Act or of the rules, regulations, procedures, and orders issued purusant to this Act, or any of the purposes and policies stated herein.

SEC. 14. If the Commissioner shall at any time determine that any agency or instrumentality of the United States using animals in research, experiments, testing, or the production of materials is not complying with the requirements of this Act, he shall immediately notify the head of said agency or instrumentality. If the noncompliance is not corrected to the satisfaction of the Commissioner within thirty days after notice of violation is served, the Commissioner shall publish his notice of noncompliance in the Federal Register and no funds may thereafter be used by the noncomplying agency or instrumentality for experiments or tests involving the use of animals.

SEC. 15. The Commissioner shall suspend or revoke any certificate of compliance with this Act or any license issued pursuant to this Act for failure to comply with any provision of this Act or the policy stated herein or for refusal to permit inspection or to produce records pursuant to the agreement required in section 8. Notice of suspension or revocation of any certificate or letter of qualification shall be sent by registered mail to the holder thereof. A copy of such notice of suspension or revocation also shall be published in the Federal Register and sent by the Commissioner to all agencies or instrumentalities of the United States authorized to make grants or to pay funds to laboratories, and to all persons or agencies making grants or payments to laboratories pursuant to contract or authorization of the United States. No grant or payment under a grant or contract shall be made to any laboratory whose certificate has been suspended or revoked.

SEC. 16. If the Commissioner determines that false statements have been made in applications for certificates of compliance with this Act, applications for letters of qualification, or in required reports to the Agency of Laboratory Animal Control or the Commissioner, the Commissioner shall immediately notify the Department of Justice of his findings.

SEC. 17. If any law-enforcement agency of any State, or any incorporated humane society, shall allege to the Commissioner that any laboratory or any holder of a letter of qualification to use animals in research has violated this Act, providing to the Commissioner allegations of specific acts, failures to act, or conditions that if found true would constitute a violation of this Act, the Commissioner shall within ninety days conduct a public hearing to determine the merits of the allegation and shall make a public and formal finding. In such hearings the Commissioner may subpena witnesses and material evidence and may require testimony under oath.

SEC. 18. Lists of all certificates of compliance with this Act and letters of qualification granted to individuals, and the applications therefor, and all project plans and annual reports required by this Act, shall be made available by the

Commissioner for public inspection, study, and copying, except when the records of specific projects are certified by appropriate authorities to involve the military security of the United States.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, September 28, 1926.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request of February 24, 1961, for a report on H.R. 1937, a bill "To provide for humane treatment of animals used in experiments and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes."

I have asked the Surgeon General for an analysis of this bill. For the reasons stated in his attached memorandum, we recommend against enactment of H.R. 1937.

We are advised by the Bureau of the Budget that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely,

ANTHONY J. CELEBREZZE,
Secretary.

Enclosure.

U.S. GOVERNMENT MEMORANDUM

Date: September 28, 1962.
To: The Secretary.
From: The Surgeon General.
Subject: Analysis of H.R. 1937.

The bill would provide for a system of controls for assuring the humane treatment of animals used in research, experiments, tests, or training by agencies of the United States or by persons conducting research, etc., under Federal grants or contracts. This system of controls would be administered by the Secretary of Health, Education, and Welfare.

The bill would prohibit any grant or contract from being made by any Federal agency after January 1, 1962, to any person who uses live animals in research, etc., unless such person has a certificate of compliance issued by the Secretary. Furthermore, the bill would provide that "painful experiments or tests" on living animals could be conducted only by persons licensed by the Secretary (or by students under the direct supervision of such a licensee). The Secretary would be required to issue licenses to individuals to engage in experiments or tests if he "is satisfied that such individuals are qualified for such purpose."

The bill would prohibit any experiment or test on living animals from being undertaken or performed by a holder of a certificate of compliance or by a Federal agency, unless a project plan had been filed with the Secretary describing the nature and purposes of the project and the procedures to be employed with respect to living animals. The Secretary would be authorized to reject any project plan if it does not conform with any provision of the bill "or any of the purposes stated in the bill."

The bill would also require the maintenance of accurate records on all experiments and tests performed, the employment of procedures which would make posible the identification of animals subjected to specified experiments and tests, and the recording of disposition of the animals. Annual reports would be required, specifying the number of animals used, the procedures employed and "such other matters as the Secretary may prescribe." These annual reports would also be required to include a copy of any published work prepared or sponsored by the reporting person or agency involving the use of live animals.

The bill would require each holder of a certificate of compliance and each Federal agency to comply with various requirements, with respect to the feeding, housing, and care of animals, including, among others, the requirement that animals used in any experiment which would result in pain must be anesthetized so as to prevent the animals from feeling pain during and after the experiment, except to the extent that the use of anesthetics would frustrate the object of the experiment. In any event, however, animals which suffered severe and prolonged pain would be required to be killed painlessly. Unless the project plan

specified a longer period during which animals must be kept alive for essential purposes of an experiment or test, animals which are seriously injured as a result of the experiment would be required, under the bill, to be killed painlessly immediately after the conclusion of the operation inflicting the injury.

The bill would authorize the Secretary to suspend or revoke any certificate of compliance or license for failure to comply with any provision of the bill. No grant, or payment under a grant, could be made to any person whose certificate has been suspended or revoked "to the extent that the Secretary's order shall provide for the purpose of obtaining compliance with this act." The notice of revocation or suspension would be required to state a time within which the holder could apply for reinstatement.

The bill would also provide that if the Secretary determines that any agency or instrumentality of the United States has not complied with the requirements of the bill, the Secretary would notify the head of such agency and if noncompliance is not corrected within 30 days after notice is served, the Secretary would be required to give public notice of the violation.

This Department is in agreement with the principle that laboratory animals should receive humane treatment. In our opinion, however, the proposed system of Federal regulation based on the requirement of certificates and licenses is neither a desirable nor a feasible approach to the achievement of the stated objective of the bill and, furthermore, could seriously impede and obstruct the successful conduct of research programs which utilize animals.

The volume of paperwork that would be imposed on research investigators by the system of project plans and annual reports proposed in the bill would constitute a serious burden on the time and creative energies of research scientists engaged in the programs in question. Good research investigators keep careful records of their animals as part of the protocol of their experiments. However, the annual reports required in this bill would be in addition to the report of scientific achievements which the scientist would ordinarily write at the end of his experiment. Since many millions of animals are used each year in the conduct of medical research and testing in the United States, the total sum of this reporting load on the scientific investigators would be very great.

Moreover, the necessity of filing a project plan with the Department could hamper or delay the scientist in following up new research leads. Many of the significant discoveries of the past were unexpected byproducts of research, suggested by leads noticed in the course of quite another line of research. The effective pursuit of scientific knowledge requires that the scientist not only be permitted, but encouraged, to following promising new leads. The bill would require the scientist who wishes to pursue a new lead to interrupt his work to file a project plan and assure its approval by the Department before he could undertake any use of animals. We have consistently protected and promoted the freedom of scientists to follow new research leads, for it is the unexpected and unpredictable discovery which often results in new and valuable scientific knowledge, and we would oppose a provision which would cause the delay or even the abandonment of the pursuit of research leads at the time most propitious for the discovery of new knowledge.

Administration of H.R. 1937 would impose a difficult and costly task on the Department. The project plans and annual reports which would be required to be filed by each investigator would constitute a great volume of paperwork. A large staff concerned with the analysis of specific proposals and an inspection service would be necessary to provide compliance with the bill's provisions.

Moreover, the role of the Department in monitoring and evaluating the compliance of other Federal agencies also presents a serious problem. Under the bill, the Secretary would be authorized to notify the head of any agency or instrumentality of the United States of noncompliance with this act, and if satisfactory correction is not made within 30 days, to make public notice of such noncompliance. It is difficult to see how such an interagency relationship could be developed to the satisfaction of either the administering agency or those whose practices would be monitored and evaluated.

While some of the standards and criteria for humane treatment of animals included in the provisions of the bill might be accepted as adequate general statements of desirable conditions or objectives, as criteria for the issuance of licenses and certificates, which in turn are the prerequisites to the award of a Federal research grant or the conduct of Federal research, they would present serious problems of definition and enforcement.

Finally, it should be noted that public and private groups are currently working to solve problems in this field. We will continue to support such efforts to foster and promote policies and practices designed to assure humane treatment of animals. Further, we in this Department will make every effort to conduct our own research activities in accordance with reasonable standards and to promote the adoption of such standards by recipients of our research grants.

In view of our fundamental disagreement with the approach and principal features of the bill, as indicated above, we have not mentioned in this memorandum a number of other ambiguities and objectionable provisions in the bill, for the clarification or improvement of these provisions would not alter our opposition to its enactment.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., September 27, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

MY DEAR MR. CHAIRMAN: This is in reply to your request for a report on H.R. 1937, a bill to provide for the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies and instrumentalities of the U.S. Government and for other purposes.

The bill would regulate scientific research, experimentation, testing, and training involving the use of living vertebrate animals, conducted by any agency or instrumentality of the United States, as well as all State and private scientific research, experimentation, testing, and training involving the use of such animals if any portion of such activities is financed from Federal funds. As of January 1, 1962, no grant for scientific research, experimentation, testing, or training or advance or payment under such a grant could be made to any person unless such person had a certificate of compliance issued by the Secretary of Health, Education, and Welfare. The Secretary, pursuant to such rules and regulations as he may prescribe, would issue certificates of compliance to persons applying therefor upon proof satisfactory to him that the applicant's methods and procedures involving the use of live animals and his personnel and facilities are in accord with the requirements of the bill. Each person to whom a certificate of compliance would be issued and each agency or instrumentality of the United States which uses live animals for scientific research or other activities covered by the bill would have to meet the following requirements:

(*a*) The animals must be provided a comfortable resting place, adequate space and facilities for normal exercise, and adequate sanitation, lighting, temperature control, and ventilation;

(*b*) The animals must receive adequate food and water and not be caused to suffer unnecessary or avoidable pain through neglect or mishandling;

(*c*) Animals used in painful experiments must be anesthetized except where the use of anesthetics would frustrate the object of the experiment. In any event, animals which suffer severe and prolonged pain must be painlessly killed. Animals which are seriously injured during the experiment must be painlessly killed immediately upon conclusion of the operation unless the project plan on file with the Secretary provides otherwise;

(*d*) An accurate record must be maintained of all experiments and tests performed, including a record of the disposition of each animal;

(*e*) Animal cages and enclosures must be identified by cards describing the nature of the experiment or by numbers which correspond to such a description in a record book;

(*f*) Painful experiments or tests on living animals may be conducted only by licensed persons or by students in an established training institution who are under the direct supervision of a licensee. All animals used by students in practice surgery or other painful procedures must be under complete anesthesia and be killed without being allowed to recover consciousness;

(*g*) No experiment or test on living animals may be performed unless a project plan is on file with the Secretary;

(*h*) Annual and other reports must be made to the Secretary. The annual report must specify the number of animals used and the procedures employed and other matters;

(*i*) Access must be given for inspection of animals, premises, books, and records by authorized representatives of the Secretary who would also be authorized to destroy or require the destruction of animals used for research, experimentation, tests, or training.

The Secretary would be required to license applicants to engage in experiments or tests if the Secretary is satisfied that they are qualified for such purposes.

If the Secretary determines that any agency or instrumentality of the United States has not complied with the provisions of the bill and if such noncompliance is not corrected within 30 days, he would be required to give public notice of such noncompliance.

The Secretary would be directed to issue rules, regulations, procedures, and orders to carry out the bill.

The Secretary would suspend or revoke any certificate of compliance or any license, for failure to comply with any provision of the bill, and would be required to set a time limit within which reinstatement may be applied for. No grant or payment under a grant could be made to any person whose certificate is suspended or revoked to the extent the Secertary so orders.

The Secretary would be required to refuse to accept any project plan or could strike any project plan from filing if he determines that it does not conform to the requirements of the bill or rules, regulations, procedures, and others thereunder.

The term "person" as used in the bill would include individuals, institutions, organizations, corporations, and partnerships.

The primary objective of the bill is to provide for the humane treatment of animals used in connection with scientific research, experimentation, testing, and training programs. The agencies of this Department and those of the State agricultural experiment stations have always followed a policy of humane treatment of experimental animals. We believe that the qualitative conditions specified in subsections 4 (a) to (e), inclusive, have been and are being equaled or surpassed in these laboratories. The conditions pertaining to care and use of laboratory animals correspond in every essential respect to our principles and practices for conducting competent biological studies. These are essential procedural conditions which must be followed in order to assure reliable experimental results. Pain or fear, particularly if severe, is undesirable in animal experiments because these sensations are likely to alter significantly any results that are related to normal physiologic functions. Humane consideration for experimental animals is a recognized ethical attribute of professionally qualified scientists. Accordingly, the experimental animal is customarily spared unnecessary pain and fear as a good scientific practice, as well as a normal humanitarian principle. For these reasons our scientists are amply qualified to govern the handling of such experimental animals which are under their direction.

In carrying out our agricultural research, experimental animals are frequently the only means for obtaining biological and other scientific information, but for both the scientific institutions and the scientific staffs the laboratory animal becomes burdensome. They are costly to maintain and most require special care on a daily basis. Since live animals are individually variable, they afford methods that are the least amenable to scientific control. Therefore, it is our policy to use experimental animals only when no other feasible and satisfactory methods can be used. This is a scientifically sound practice.

The requirements imposed in subsections 4 (f) to (i) would not accomplish any improvement in humane treatment of experimental animals. Compliance with these subsections would impede and delay the progress of research and burden the scientific staff with additional record keeping. Additional reporting requirements would have no pertinence to the planning and execution of scientific research. The provision, particularly under subsection 4(g), requiring preapproval of project plans, would require the research scientist to anticipate his exploratory investigations before testing his hypotheses. This requirement ignores the basic conditions that are essential to creative, productive scientific progress through laboratory experimentation.

In light of the factors mentioned above, the Department of Agriculture opposes the enactment of H.R. 1937. In our opinion, Federal regulation by a Department of Government of all scientific research, experimentation, testing, and training involving the use of living vertebrate animals, if any portion of such activities is financed from Federal funds, would impose unnecessary administrative burdens, without compensating advantages. Nor do we believe that the mechanism specified in the bill for obtaining certificates of compliance and

licenses in the attainment of objectives is a desirable approach. Similarly, the filing of a project plan and reporting thereon to a specified Department of Government for each agricultural experiment or test involving the use of live animals would not be a practicable approach from the standpoint of the paperwork involved. This would cause unconscionable delays in initiation of research.

The Bureau of the Budget advises that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

ORVILLE L. FREEMAN, *Secretary.*

DEPARTMENT OF THE ARMY,
Washington, D.C., October 12, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: Reference is made to your request to the Secretary of Defense for views of the Department of Defense with respect to H.R. 1937, 87th Congress, a bill to provide for the humane treatment of animals used in experiments and tests, etc. The Secretary of Defense has delegated to the Department of the Army the responsibility for expressing the views of the Department of Defense thereon.

The purpose of the bill is stated in the title. The bill, if enacted, would establish as Federal policy that scientific investigators supported by Federal funds must provide humane treatment to the live animals used in their researches, specifically to include adequate food, space, rest, exercise, sanitation, light, ventilation, temperature control, and most important, freedom from unnecessary pain. The bill goes on to provide an administrative mechanism under the Secretary, Health, Education, and Welfare, designed to effectuate this policy. Only those who obtain compliance certificates from the Department of Health, Education, and Welfare would be eligible for Federal grant support; compliance certification could only be obtained and maintained by those whose existing research projects, if any, are determined to comply with the bill's policy; who submit descriptions of their proposed research plans to the Department of Health, Education, and Welfare; keep detailed records of animals used and the care afforded them; make such records, animals, and the project premises available to inspection by representatives of the Department of Health, Education, and Welfare; make annual and additional requested reports to the Department of Health, Education, and Welfare concerning the live animal procedures used in their research projects; and have adequate facilities to enable the applicant to comply with the bill's policy, and who are then determined by the Department of Health, Education, and Welfare based on the above-listed considerations, to be in compliance with the bill's policy.

The Department of the Army on behalf of the Department of Defense is opposed to the above-mentioned bill, although it is in agreement with the bill's stated purpose of providing humane treatment to animals used in research.

It is present Department of Defense practice to provide humane treatment to the live experimental animals used in "in-house" research projects of the Department of Defense, generally in accordance with the bill's policy, as described in section 1 of the bill, and in accord with the principles of laboratory animal care of the National Society for Medical Research in this connection, and contractors and grantees of the Department of Defense who use live animals in research projects supported by the Department of Defense are expected and encouraged to do the same. This factor is already taken into account in the awarding of Government grants. Under the circumstances, the requirement set forth in section 5 of the bill that the Secretary of Health, Education, and Welfare pass on the qualifications of all research scientists who use laboratory animals, would be, if adopted, unnecessary duplication. Moreover, this Department does not perceive the need for Federal legislation such as is proposed in H.R. 1937, 87th Congress, in the absence of demonstrated failure either by the Department of Defense or its contractors and grantees to live up to humane standards of treatment of laboratory animals.

In particular detail, the bill is opposed for the following reasons:

Section 4(g) of the bill requires that all research plans involving the use of live animals and supported by Government funds be filed in such form as the Secretary of Health, Education, and Welfare prescribes, and describe the nature of and purposes of the project and the procedures to be employed with

respect to living animals. Research, by its nature, is not completely predictable, but proceeds step by step, each step depending on the results of the preceding step. Inasmuch as succeeding steps may alter the procedures, nature, and purposes of the project at unpredictable intervals, the above requirements would result in confusion, delay, frustrations, lack of efficiency, failure to follow promising leads, and eventual abandonment of many valuable projects. If an investigator were to know in advance the detailed steps he was to take, which the bill requires him to submit to the Department of Health, Education, and Welfare, he would generally be making demonstrations, not pursuing research.

Sections 4(d) and 4(e) of the bill provide for records to be maintained of all experiments performed to include what specific animals were subjected to what tests and with what results, and for all animal enclosures to be so marked as to indicate the nature of the experiment involved. These recordkeeping requirements proposed to be kept for the Department of Health, Education, and Welfare would be in addition to those already required to be kept for the sponsoring agency and research institution and would necessitate a large amount of unnecessary clerical work which would divert funds from research. Moreover, the requirements would consume the time of scientists at least in part. This they would regard as unnecessary, as these administrative requirements would not assist in achieving scientific results. It goes without saying that such administrative burdens could drive competent scientists away from Government-sponsored research and could make it difficult, if not impossible, to recruit and retain talented young men in scientific research. This, in turn, could jeopardize the Government's medical research program.

From the standpoint of the Government, the administrative burden required by the bill would be enormous and costly. The Department of Health, Education, and Welfare would be required to establish elaborate systems for licensing thousands of research workers, for inspecting hundreds of laboratory facilities, and for obtaining compliance with the bill's policy, the latter with only the limited remedies afforded by the bill. In this latter connection, it is noted that the only remedies available to the Secretary of Health, Education, and Welfare, should he find noncompliance by a Government instrumentality engaging in research, would be a notice which he might give to the head of any Government agency which had not theretofore complied with the act, together with subsequent public notice of such noncompliance if the deficiency was not corrected within 30 days of the aforementioned notice to the head of the agency. In the case of noncompliance by an individual or institution (as distinct from a Government instrumentality) already holding a certificate of compliance, the Secretary of Health, Education, and Welfare would be required to send a notice of suspension or revocation of such certificate to all agencies which were considering or had made a grant to the certificate holder, which procedure would be the only remedy available. It is not clear what the consequences would be if a grantor agency disagreed or disregarded the Secretary of Health, Education, and Welfare's notice, or substituted an award of a research contract covering the same research project in lieu of a revoked grant. In view of the limited remedies available even if noncompliance should be found, the wisdom of establishing elaborate administrative machinery to implement such program is open to question.

A further administrative burden would fall on the heads of the Federal granting agencies which would have the task of making certain that each applicant for one of its research grants had a current certificate of compliance. Since the researcher would have to apply for a certificate of compliance before he could obtain Government support for his research project, and since the Department of Health, Education, and Welfare review of such application would take a significant amount of time, this would inevitably cause delay in initiating the research project, a delay which would certainly be wasteful from the standpoint of furthering needed research.

The requirement that the Department of Health, Education, and Welfare approve, monitor, license, and inspect experiments involving live animals performed by military medical agencies would not only result in the above-mentioned unnecessary and unacceptable delays in initiating research programs, but would result in increased difficulty in recruiting competent research personnel and research agencies to work on research studies needed by the Armed Forces.

There are other technical objections, but, in particular, reference is made to section 4(f) of the bill which would unqualifiedly require that all animals used by students in "practice surgery, or other painful procedures" be "under complete anesthesia." In this connection, the term "painful" is at best an ambiguous

term, and at worst an all-encompassing one. Thus, simple injections, ordinarily administered by technicians, are to some extent "painful." Are such injections to be outlawed? In respect to the requirement that certain experimental animals used by students when subjected to painful procedures shall be "under complete anesthesia," such requirement would, in some cases, negate the value of the experiment because of the tissue injuries resulting from such anesthesia.

In summary, it is stressed that the Department of Defense already adheres to the recognized standards for humane treatment of experimental animals established by the National Society for Medical Research, that there is dubious value in establishing a uniform Federal policy in this area, that the bill, if enacted in its present form, would have a deleterious effect on Government-supported research programs in terms of delays and administrative burdens, that the costs to the Department of Health, Education, and Welfare of implementing the bill's program appear enormous in the light of the elaborate administrative machinery contemplated by the bill, and that such costs might more profitably be devoted to additional research effort.

The fiscal effects of this legislation are not known to the Department of Defense.

This report has been coordinated within the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget advises that, from the standpoint of the administration's program, there is no objection to the presentation of this report for the consideration of the committee.

Sincerely yours,

CYRUS R. VANCE, *Secretary of the Army.*

VETERANS' ADMINISTRATION,
September 27, 1962.

HON. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: The following comments are furnished pursuant to your request for a report by the Veterans' Administration on H.R. 1937, 87th Congress.

The purpose of the bill is to provide a system of controls to assure the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies and instrumentalities of the U.S. Government.

The bill would establish certain specific requirements for the compliance of persons or agencies using live animals for research, experiments, tests, or training and would make the Secretary of Health, Education, and Welfare responsible for administering a program of control measures designed to insure the humane treatment of such animals. It would prohibit Federal grants to persons engaged in such research activities unless they have a certificate of compliance with the prescribed requirements issued by the Secretary.

The bill would prohibit any experiment or test on living animals unless an acceptable project plan has been filed with the Secretary describing the nature and purposes of the project and procedures to be employed with respect to living animals. It provides for the maintenance of detailed records on all experiments and tests and requires that an annual report specifying the number of animals used, the procedures employed, and such other matters as the Secretary may prescribe, be submitted to the Secretary.

I am sure that all reasonable persons would agree with the principle that laboratory animals should receive humane treatment. This is a concept so firmly established in our culture that its promulgation by legislative mandate would seem to be unnecessary. Moreover, we feel that the flexibility essential to the conduct of an effective research program would be unduly limited by the system of centralized controls contemplated by the bill. This legislation, if enacted, could very seriously retard the progress of research programs involving the use of animals.

While we cannot estimate the cost effect of the proposed measure on our research activities, the additional administrative work which would be required by the regulatory and procedural provisions of the bill would undoubtedly be considerable.

We assume that the bill is of special interest to the Department of Health, Education, and Welfare and understand that the committee has requested the views of that agency. For the reasons stated above, I am unable to recommend favorable consideration of H.R. 1937 by your committee.

We are advised by the Bureau of the Budget that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely,

W. J. DRIVER, *Deputy Administrator.*

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., September 27, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your letter of February 9, 1961, requesting the views of the National Aeronautics and Space Administration on H.R. 1937, a bill to provide for the humane treatment of animals used in experiments and tests by recipients of grants and instrumentalities of the U.S. Government and for other purposes.

It would be the declared policy of the United States that living vertebrate animals be used for scientific experiments only when no other method was available to obtain information for the cure of disease, alleviation of suffering, prolongation of life, or for military requirements. Animals would be well fed, sheltered, and handled; would be spared unnecessary pain; would be anesthetized as much as possible; and would be painlessly killed as soon as possible after the experiment.

The Secretary of Health, Education, and Welfare would have jurisdiction over the use of animals. He would certificate applicants shown to comply with the Secretary's regulations regarding personnel, facilities, and care of animals, and only such certificated persons would be eligible for Federal grants or contracts involving live animal experiments. The Secretary would license applicants, and only licensed applicants could perform live animal experiments. Project plans would have to be filed with and approved by the Secretary, detailed records kept and reports filed with the Secretary, and the Secretary would have power to inspect and suspend or revoke licenses and strike project plans for violations of the act.

The National Aeronautics and Space Administration is in complete accord with the statement of policy set out in the preamble to the bill, and would recommend that in line 9 thereof the words "and protection" be inserted after "prolongation." This would be in accord with the policy of using animal experiments to determine the effects of space flight.

While we agree with the policy expressed in the preamble, we feel that the matter is adequately covered by existing State laws and the rules and procedures of the American Medical Association. Such existing laws and procedures effectively control the great majority of the scientific community. While the proposed bill might effectively control the remaining small minority of scientists engaged in live animal experiments, we feel that this benefit would be far outweighed by the restrictions laid on the great majority of the scientific community. Accordingly, we are unable to favor the enactment of H.R. 1937.

The Bureau of the Budget has advised that it has no objection, from the standpoint of the administration's program, to the submission of this report to the Congress.

Sincerely yours,

PAUL G. DEMBLING,
Director, Office of Legislative Affairs.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., September 26, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your requests for the views of the Bureau of the Budget on H.R. 3556, a bill to provide for humane treatment of animals used in experiment and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes, and H.R. 1937, a bill to provide for the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies and instrumentalities of the U.S. Government, and for other purposes.

We are sympathetic to the objectives of the bills, and would like to indicate some current developments in the humane treatment of animals which we believe hold promise for constructive action. One is a program being developed, with the assistance of a grant from the National Institutes of Health, by the Animal Care Panel to develop standards for animal facilities and methods of care. It is envisioned that an institution could voluntarily request certification of its facilities and methods of care by the Panel, which is a private nonprofit organization sponsored by members of the scientific community, on the basis of minimum standards. This program is now in the formative stages but we intend to follow its progress with interest. I would also call your attention to the fact that the Institute of Laboratory Animal Resources, an agency of the National Academy of Sciences-National Research Council, has recently undertaken a review of the present status and future requirements for space, equipment, personnel, and methods of animal care.

It is our view that voluntary action, of the type cited above, is more consistent with other national objectives in the field of medical research than comprehensive regulation by the Federal Government.

Sincerely yours,

PHILLIP S. HUGHES,
Assistant Director for Legislative Reference.

DEPARMENT OF HEALTH, EDUCATION, AND WELFARE,
September 28, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request of March 16, 1961, for a report on H.R. 3556, a bill, to provide for humane treatment of animals used in experiments and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes.

I have asked the Surgeon General for an analysis of this bill. For the reasons stated in his attached memorandum, we recommend against enactment of H.R. 3556.

We are advised by the Bureau of the Budget that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely,

ANTHONY J. CELEBREZZE, *Secretary.*

Enclosure.

U.S. GOVERNMENT MEMORANDUM

Date: September 28, 1962.
To: The Secretary.
From: The Surgeon General.
Subject: Analysis of H.R. 3556.

The bill would provide for the establishment, in the executive branch of the Government, of an Agency for Laboratory Animal Control headed by a Commissioner who would be appointed for a 5-year term by the President, with

the approval of the Senate. Eligibility for the position of Commissioner would be limited to persons admitted to practice before the Supreme Court of the United States. No person who had "ever been connected with any laboratory" could be eligible.

Certificates of compliance, issued by the Commissioner, would be required for all agencies of the United States using any animals for research, experimentation, testing, or training in scientific procedures or techniques, or the production of medical or pharmaceutical material, and no agency of the United States could make any purchase from a laboratory unless the laboratory held a certificate of compliance. Furthermore, no grant or contract could be made by any Federal agency after January 1, 1962, to any laboratory or person using animals in research, etc., unless the laboratory held a certificate of compliance.

Each holder of a certificate of compliance, with respect to any research, etc., involving the use of animals, would be required to file a project plan with the Agency for Laboratory Animal Control describing the nature and purpose of the project and the procedures to be used with respect to living animals. No use of animals could be undertaken until the project plan had been approved by the Commissioner.

The bill would require that accurate records be maintained on all experiments and procedures performed, in such form as to make possible the identification of animals subjected to specified experiments and tests, and of the disposition of all animals. Annual reports would be required, specifying for each project plan previously filed the number and species of animals used, the procedures employed, the sources from which the animals were acquired, and "such matters as the Commissioner may prescribe." These annual reports would also be required to include a copy of any published work prepared or sponsored by the reporting person or laboratory involving the use of animals.

The bill would also require every laboratory holding a certificate of compliance, and every agency of the United States using animals in research, etc., to comply with a requirement, among others, that experiments or tests on animals shall be conducted only by persons holding letters of qualification issued by the Commissioner, or by students in a laboratory holding a certificate of compliance, when in the presence and under the direct supervision of a person holding a letter of qualification. Letters of qualification could be issued only to persons who had been awarded a doctoral degree in medicine, veterinary medicine, physiology, or zoological science by an accredited university or college.

The bill would further require that regardless of the nature or purpose of any experiment or procedure, animals that would suffer prolonged pain or stress as a result of an experiment or procedure must be painlessly killed immediately after the procedure causing the pain or stress has been completed "whether or not the objective of the experiment or procedure has been attained," and would require all animals used by students in practice surgery or other painful procedures to be under complete anesthesia and to be killed without being allowed to recover consciousness. Anesthetics would be required to be administered only by a licensed veterinarian or doctor of medicine qualified in anesthesiology, except that a student in a graduate medical school could do so for purposes of training when in the presence and under the immediate supervision of a licensed veterinarian or doctor of medicine.

No certificate of compliance could be issued by the Commissioner unless the laboratory had agreed in writing that authorized representatives of the Commissioner and law enforcement officers of the States in which the laboratory operates would be given access at any time to the animals, premises, and records of the laboratory.

No Federal grant or payment under a grant or contract could be made to any laboratory whose certificate had been suspended or revoked by the Commissioner. In the case of noncompliance of a Federal agency, the Commissioner would notify the agency, and if the noncompliance were not corrected within 30 days of notification, the Commissioner would publish notice in the Federal Register and no funds could thereafter be used by the agency for experiments or tests involving the use of animals.

We are in agreement with the principle that laboratory animals should receive humane treatment. In our opinion, however, the proposed system of Federal regulation based on the requirement of certificates and licenses is neither a desirable nor a feasible approach to the achievement of the stated objective of the bill, and furthermore could seriously impede and obstruct the successful conduct of research programs which utilize animals.

The volume of paperwork that would be imposed on research investigators by the system of project plans and annual reports proposed in the bill would constitute a serious burden on the time and creative energies of research scientists engaged in the programs in question. Good research investigators keep careful records of their animals as part of the protocol of their experiments. However, the annual reports here required in this bill would be in addition to the report of scientific achievements which the scientist would ordinarily write at the end of his experiment. Since many millions of animals are used each year in the conduct of medical research and testing in the United States the total sum of this reporting load on the scientific investigators would be very great.

Moreover, the necessity of filing a project plan with the Commissioner could hamper or delay the scientist in following up new research leads. Many of the significant discoveries of the past were unexpected byproducts of research, suggested by leads noticed in the course of quite another line of research. The effective pursuit of scientific knowledge requires that the scientist not only be permitted, but encouraged, to follow promising new leads. The bill would require the scientist who wishes to pursue a new lead to interrupt his work to file a project plan and await its approval by the Commissioner before he could undertake any use of animals. We have consistently protected and promoted the freedom of scientists to follow new research leads, for it is the unexpected and unpredictable discovery which often results in new and valuable scientific knowledge, and we would oppose a provision which would cause the delay or even abandonment of the pursuit of research leads at the time most propitious for the discovery of new knowledge.

Administration of H.R. 3556 would impose a difficult and costly task on the proposed Agency for Laboratory Animal Control. The project plans and annual reports which would be required to be filed with the Commissioner by each investigator would constitute a great volume of paperwork. A large staff concerned with the analysis of specific proposals and an inspection service would be necessary to provide compliance with the bill's provisions. Few scientists qualified to evaluate the use of animals in the context of the total research project would be interested in engaging in such regulatory and policing activities.

Moreover, thhe role of the Agency in monitoring and evaluating the compliance of other Federal agencies also presents a serious problem. Under the bill, the Commissioner would have the obligation to make determinations as to the degree of compliance of other Federal agencies and would be required to give public notice of any noncompliance, and "no funds may thereafter be used by the noncomplying agency or instrumentality for experiments or tests involving the use of animals." It is difficult to see how such an interagency relationship could be developed to the satisfaction of either the administering agency or those whose practices would be monitored and evaluated.

While many of the standards and criteria for humane treatment of animals included in the provisions of the bill could be accepted as adequate general statements of desirable conditions or objectives, as criteria for the issuance of licenses and certificates, which in turn are the prerequisites to the award of Federal research grants or the conduct of Federal research, they would present serious problems of definition and enforcement.

Finally, it should be noted that public and private groups are currently working to solve problems in this field. We will continue to support such efforts to foster and promote policies and practices designed to assure humane treatment of animals. Further, we in this Department will make every effort to conduct our own research activities in accordance with reasonable standards and to promote the adoption of such standards by recipients of our research grants.

In view of our fundamental disagreement with the approach and principal features of the bill, as indicated above, we have not mentioned in this memorandum a number of other ambiguities and objectionable provisions in the bill, for the clarification or improvement of these provisions would not alter our opposition to its enactment.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., September 27, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request for a report on H.R. 3556, a bill to provide for humane treatment of animals used in experiment and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes.

The legislation if enacted would declare it to be the policy of the United States that animals used in experiments, tests, the teaching of scientific methods and techniques, and the production of medical and pharmaceutical materials, shall be spared avoidable pain, stress, and discomfort, and fear. Under the bill such animals would be used only when no other feasible and satisfactory method can be used to obtain necessary scientific information for the cure of disease, alleviation of suffering, or prolongation of life, or for military requirements. The number of animals used for such purposes would be required to be reduced as far as possible and all such animals used would have to be comfortably housed, well fed, and humanely treated.

There would be established an Agency for Laboratory Animal Control, headed by a Commissioner who would be appointed by the President with Senate approval. Under the bill agencies and instrumentalities of the United States would be prohibited from: (1) using any animal for research, experiments, tests, training in scientific or technical procedures, or production of medical or pharmaceutical materials unless they have been granted a certificate of compliance issued by the Commissioner; (2) making any purchase from any laboratory unless the laboratory holds such a certificate; and (3) making grants or advances of funds for such purposes to any laboratory or person unless the laboratory or person has such a certificate. The effective date stated in the bill is January 1, 1962, which we assumed would be changed if the bill is enacted.

No certificate of compliance would be issued: (1) until the Commissioner receives satisfactory proof that the applicant's personnel and facilities and projects planned meet the criteria specified in the bill; and (2) unless the applicant laboratory agrees in writing that representatives of the Commissioner and State law enforcement officers would be permitted access at any time to the animals, premises, and records of the laboratory. The use of any animals by any certificate holder would be prohibited until a project plan has been filed with the Agency of Laboratory Animal Control, in form to be prescribed by the Commissioner and the plan has been approved by the Commissioner.

A letter of qualification to use animals in research would be issued to any person (1) who has a doctor's degree in medicine, veterinary medicine, physiology, psychology, or zoological science from an accredited university or college; (2) who has never been convicted of cruelty to animals or found by the Commissioner to have participated knowingly in a violation of the provisions of the bill; and (3) who is employed or sponsored by a laboratory holding a certificate, or who has applied for or received a grant of funds from an agency or instrumentality of the U.S. Government for research involving the use of animals, or who is in the employ or service of such an agency or instrumentality.

In addition, H.R. 3556 would impose specified requirements on laboratories holding certificates and U.S. agencies and instrumentalities using animals, with respect to anesthesia and killing of animals used; pain-relieving care and convalescence conditions for the anmials; feed, water, space, and exercise facilities for the animals; and related matters. Experiments and tests could be conducted only by persons holding letters of qualification or by students in a laboratory holding a certificate when in the presence and under the direct supervision of a person holding a letter of qualification. Only legally acquired animals could be used, and they must be maintained in accordance with the applicable State laws.

The bill would also require (1) the use of reduced numbers of animals and substitution of lower for higher species in research and similar projects and production procedures to the greatest extent possible; (2) certain records to be kept and reports to be made; and (3) applications for certificates, project plans, and required reports to be certified under penalty of perjury, by all persons holding letters of qualification involved and the chief executive officer of any organization, institution, school, or corporation involved. The Commissioner would be authorize to refuse approval of project plans, suspend or revoke certificates and licenses (or letters of qualification), and publish notices of noncompliance by any

U.S. agency or instrumentality. Use of funds by the noncomplying agency or instrumentality for experiments or tests involving the use of animals would be prohibited. Grants or payments to laboratories whose certificate had been suspended or revoked would also be prohibited.

The bill provides for the Commissioner to report to the Department of Justice false statements in applications or reports. It would require the Commissioner to hold a public hearing whenever any State law enforcement agency or incorporated humane society alleged specific violations of the act. It would require lists of certificates of compliance and letters of qualification, and applications therefor, and project plans and annual reports to be made available to the public, except when the records of specific projects are certified to involve military security.

The primary objective of the bill is to provide for the humane treatment of animals used in connection with research, experiments, tests, training programs, and production of medical and pharmaceutical materials. The agencies of this Department and those of the State agricultural experiment stations have always followed a policy of humane treatment of experimental animals. The conditions in the bill pertaining to care and use of laboratory animals correspond in every essential respect to our principals and practices for conducting competent biological studies. These are essential procedural conditions which must be followed in order to assure reliable experimental results. Pain or fear, particularly if severe, is undesirable in animal experiments because these sensations are likely to alter significantly any results that are related to normal physiologic functions. Humane consideration for experimental animals is a recognized ethical attribute of professionally qualified scientists. Accordingly, the experimental animal is customarily spared unnecessary pain and fear as a good scientific practice, as well as for normal humanitarian principles. For these reasons our scientists are amply qualified to govern the handling of experimental animals which are under their direction.

In carrying out our agricultural research, use of experimental animals is frequently the only means for obtaining biological and other scientific information, but for both the scientific institutions and the scientific staffs use of the laboratory animal becomes burdensome. They are costly to maintain and require special care on a daily basis. Since live animals are individually variable, they afford methods that are the least amenable to scientific control. Therefore, it is our policy to use experimental animals only when no other feasible and satisfactory methods can be used. This is a scientifically sound practice.

The provision requiring preapproval of project plans would require the research scientist to anticipate his exploratory investigations before testing his hypotheses. This requirement ignores the basic conditions that are essential to creative, productve scientific progress through laboratory experimentation.

We do not believe that the mechanism specified in the bill for obtaining certificates of compliance and licenses in the attainment of objectives is a desirable approach. Similarly, the filing of a project plan and reporting thereon to a specified agency of Government for each agricultural experiment or test involving the use of live animals would not be a practicable approach from the standpoint of the paperwork involved. This would cause unconscionable delays in initiation of research. In light of the factors mentioned above, the Department of Agriculture opposes the enactment of H.R. 3556.

The Bureau of the Budget advises that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

ORVILLE L. FREEMAN, *Secretary.*

DEPARTMENT OF THE ARMY,
Washington, D.C., October 12, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: Reference is made to your request to the Secretary of Defense for the views of the Department of Defense with respect to H.R. 3556, 87th Congress, a bill to provide for the humane treatment of animals used in experiments and tests, and so forth. The Secretary of Defense has delegated to the Department of the Army the responsibility for expressing the views of the Department of Defense thereon.

The purpose of the bill is stated in the title. The bill, if enacted, would establish as Federal policy, effective January 1, 1962, that animals used in research, teaching, or the production of pharmaceuticals by Federal agencies or laboratories holding Federal grants or contracts shall be spared avoidable pain, that they shall be used only when no other feasible and satisfactory method can be used, that the number of animals and the level of development of the species used for these purposes shall be reduced as far as possible, and that all animals so used shall be comfortably housed, well fed, and humanely treated, specifically to include adequate food, space, rest, exercise, sanitation, light, ventilation, temperature control, as well as freedom from unnecessary pain.

The bill provides as the administrative mechanism for implementing such policy an agency in the executive branch of the Government to be known as the Agency for Laboratory Animal Control, to be headed by a Commissioner. Only those Federal agencies obtaining compliance certificates from the Commissioner could use any animals in these research programs, and any private laboratory using animals in its research program which did not hold such a certificate of compliance could not receive grants or awards of contracts or payments thereunder from Federal agencies.

Compliance certificates could only be obtained and maintained by those laboratories that would submit descriptions of their project plans to the Commissioner, that would keep detailed records of animals and the project premises available to inspection by representatives of the Commissioner and of State law-enforcement agencies, that would make annual and additional requested reports to the Commissioner concerning the live animal procedures used in their research project, that would have adequate facilities and personnel (who must have, or work under and in the presence of, persons having "letters of qualification" to handle experimental animals issued by the Commissioner) which would enable the applicant laboratory to comply with the bill's policy, that would follow certain prescribed rules concerning the infliction and avoidance of pain in experimental animals, and that would satisfy the Commissioner that their research projects were not and would not be inconsistent with the above requirements and with the bill's policy generally.

The Department of the Army, on behalf of the Department of Defense, is opposed to the above-mentioned bill, although it is in agreement with the bill's stated purpose of providing humane treatment to animals used in research.

It is present Department of Defense practice to provide humane treatment of the live experimental animals used in "in-house" research projects of the Department of Defense, generally in accordance with the bill's policy, as described in section 1 of the bill, and in accord with the principles of laboratory animal care of the National Society for Medical Research in this connection, and contractors and grantees of the Department of Defense who use live animals in research projects supported by the Department of Defense are expected and encouraged to do the same. This factor is already taken into account in the awarding of Government grants. Under the circumstances, the requirement set forth in section 10 of the bill that the Commissioner issue letters of qualification to all research scientists who use laboratory animals, would be, at best, unnecessary duplication, and at worst could result in interference with the sponsoring agency's and the laboratory's choice of personnel best qualified to do the desired research. Moreover, this Department does not perceive the need for Federal legislation such as is proposed in H.R. 3556, 87th Congress, in the absence of demonstrated failure either by the Department of Defense or its contractors and grantees to live up to humane standards of treatment of laboratory animals.

In particular detail, the bill is opposed for the following reasons:

Section 9 of the bill requires that all research plans involving the use of animals and supported by Government funds be filed in such form as the Commissioner prescribes, that they describe the nature and purposes of the project and the procedures to be employed with respect to living animals, and that such plans be approved by the Commissioner as a condition precedent to use of animals in experiments by holders of certificates of compliance. Research, by its nature, is not completely predictable, but proceeds step by step, each depending on the result of the preceding step. Inasmuch as succeeding steps may alter the procedures, nature and purposes of the project at unpredictable intervals, the above requirements would result in confusion, delay, frustrations, lack of efficiency, failure to follow promising leads and eventual abandonment of many valuable projects. If an investigator were to know in advance the detailed steps he would take, which the bill requires him to submit to the Commissioner,

he would generally be making demonstrations, not pursuing research. Delays incurred in scheduling research programs contingent upon project approval by the Commissioner could cause contract delays that would frustrate the entire research effort.

Section 10(a) provides that letters of qualification to use animals in research may be issued only to persons holding doctoral degrees in medicine, veterinary medicine, physiology, psychology, or zoological science. This provision would preclude, unreasonably, many qualified instructors who have only bachelor's or master's degrees from obtaining letters of qualification, thereby hampering the educational efforts in many of our teaching institutions.

Sections 12(k) and 12(l) provide for records to be maintained of all experiments performed to include what specific animals were subjected to what tests and with what results, and for all animal enclosures to be so marked as to indicate the nature of the experiment involved. These recordkeeping requirements proposed to be kept for the Commissioner and for State law-enforcement agencies would be in addition to those already required to be kept for the sponsoring agency and research institution, and would necessitate a large amount of unnecessary clerical work which would divert funds from research. Moreover, the requirements would consume the time of scientists at least in part. This they would regard as unnecessary, as these administrative requirements would not assist in achieving scientific results. It goes without saying that such administrative burdens could drive competent scientists away from Government-sponsored research and could make it difficult, if not impossible, to recruit and retain talented young men in scientific research. This, in turn, could jeopardize the Government's medical research program.

From the standpoint of the Government, the administrative burden required by the bill would be enormous and costly. The Commissioner would be required to establish elaborate systems for licensing thousands of research workers, for inspecting hundreds of laboratory facilities, and for obtaining compliance with the bill's policy.

In this latter connection, it is noted that the sanctions available to the Commissioner, should he find noncompliance by a Federal agency or private laboratories, are extremely severe inasmuch as all Federal funds for such project would be cut off immediately in the case of a private laboratory, and 30 days after notice of violation is served and correction not effected, in the case of a Federal agency.

A further administrative burden would fall on the heads of the Federal granting agencies, each of which would have the task of making certain that each applicant laboratory for one of its research grants had a current certificate of compliance. Since the laboratory would have to apply for a certificate of compliance before it could obtain Government support for its research project, and since the review of such application by the Commissioner would take a significant amount of time, this would inevitably cause delay in initiating the research project, a delay which would certainly be wasteful from the standpoint of furthering needed research.

The requirement that the Commissioner approve, monitor, license, and inspect experiments involving live animals performed by military medical agencies would not only result in the above-mentioned unnecessary and unacceptable delays in initiating research programs, but could result in increased difficulty in recruiting competent research personnel and research agencies to work on research studies needed by the Armed Forces.

There are other technical objections, but, in particular, reference is made to section 12(g) of the bill which would unqualifiedly require that all animals used by students in "practice surgery, or other painful procedures" be "under complete anesthesia." In this connection the term "painful" is at best an ambiguous term, and at worst an all-encompassing one. Thus, simple injections ordinarily administered by technicians, are to some extent "painful." Are such injections to be outlawed? In respect to the requirement that certain experimental animals used by students when subjected to painful procedures shall be "under complete anesthesia," such requirement would, in some cases, negate the value of the experiment because of the tissue injuries resulting from such anesthesia.

Section 2(a) defines animals in such broad strokes as to appear to include human beings within it, but nowhere else in the bill is there any indication that the bill's policy extends to human volunteer subjects for experiments. It is believed that this issue should be clarified.

Section 3 provides that to be eligible for appointment as Commissioner, a candidate must have been admitted to practice law in the Supreme Court of the United States but, any candidate is ineligible if he has ever been connected with a laboratory. This provision appears singularly unreasonable as it would necessarily preclude the appointment of those types of persons best qualified to supervise the procedures of research laboratories, putting aside for the moment the wisdom of imposing such supervision.

The definition of "laboratory" contained in section 2(g) is vague; thus it is unclear in section 5, which provides that no Federal agency shall make any purchase from any laboratory not holding a certificate of compliance, whether, if any one of the constituent laboratories of a large university or corporation did not hold a certificate of compliance, this would preclude all other agencies of the Federal Government from contracting with the balance of the applicable university or corporation.

Section 7 provides that the Commissioner shall issue no certificate of compliance until he has received proof that projects planned by the applicant laboratory will be conducted in accordance with the bill's policy. It is submitted that this is an inconsistency in terms, inasmuch as there can be no proof of an applicant laboratory's future intention.

The requirement in section 8 that all laboratories agree to permit representatives of the Commissioner and State law-enforcement officers to have access at all times to research animals, premises, and records, is unreasonable (in its reference to all times); although the bill does not expressly so provide, it is assumed, of course, that the bill's provisions giving inspectors access to laboratories using animals in their research programs is subject to, and does not supersede regular security procedures insofar as necessary access to security information, if any, is concerned.

Section 12(a) requires that all laboratories, in order to maintain their certificates of compliance, must design and execute their projects so as to obtain "maximum reduction and substitution." "Reduction" is defined as the use of a reduced number of animals, and "substitution" is defined as the use of a less highly developed species of animals in place of a more highly developed species. The bill, however, contains no guidance as to how to recognize the points at which maximum substitution or maximum reduction are reached, and it is believed such guidance is necessary to make section 12(a) meaningful.

Section 12(b) provides that animals used in any way that would cause pain shall be anesthetized so as to prevent the animals from feeling pain during or after the experiment unless the project plan approved by the Commissioner states that anesthesia would frustrate the purpose of the project. This provision would appear to place the Commissioner, a nonscientist, in a position to control the scope and method of research projects, which should, in the view of this Department, preferably be a decision left to the responsible scientist-investigator.

Section 12(f) requires that anesthetics be administered only by licensed veterinarians, doctors of medicine, or graduate students in medical schools under the immediate supervision of the aforementioned. This requirement is unrealistic since there are insufficient veterinarians and doctors of medicine available to make this proviso feasible.

In summary, it is stressed that the Department of Defense already adheres to the recognized standards for humane treatment of experimental animals established by the National Society for Medical Research, that there is dubious value in establishing a uniform Federal policy in this area, that the bill, if enacted in its present form, would have a deleterious effect on Government-supported research programs in terms of delays and administrative burdens, that the costs to the Department of Health, Education, and Welfare of implementing the bill's program appear enormous in the light of the elaborate administrative machinery contemplated by the bill, and that such costs might more profitably be devoted to additional research effort.

The specific fiscal effects of this legislation are not known to the Department of Defense.

This report has been coordinated within the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget advises that, from the standpoint of the administration's program, there is no objection to the presentation of this report for the consideration of the committee.

Sincerely yours,

CYRUS R. VANCE,
Secretary of the Army.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., September 27, 1962.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request for the views of the National Aeronautics and Space Administration on H.R. 3556, a bill "To provide for humane treatment of animals used in experiment and research by recipients of grants from the United States, and by agencies and instrumentalities of the United States, and for other purposes."

The proposed legislation would declare it the policy of the United States that animals used in experiments, tests, teaching of scientific methods and techniques, and the production of medical and pharmaceutical materials shall be spared avoidable pain, stress, discomfort, and fear, that they shall be used only in minimum numbers and only when no other feasible and satisfactory method can be used to obtain necessary scientific information for the cure of disease, alleviation of suffering, prolongation of life, or for military requirements, and that all animals so used shall be comfortably housed, well fed, and humanely treated.

The Agency for Laboratory Animal Control would be established in the executive branch of the Government. It would be headed by a Commissioner of Laboratory Animal Control, appointed for 5 years by the President with Senate approval. A Commissioner would have to be a member of the bar of the Supreme Court of the United States, and must never have been connected with any laboratory.

A certification and qualification system would insure that all use of live animals in Government-funded projects would be in accordance with the policy of the proposed legislation, which policy would be implemented by regulations promulgated by the Commissioner.

The National Aeronautics and Space Administration is in complete accord with the statement of policy and the objectives of the proposed legislation. The animal colonies operated by or for NASA are subject to professional inspections at any time, and must be maintained so as to insure healthy and contented animals for research use.

It is felt that existing State laws and the rules and procedures of the American Medical Association effectively police and control the great majority of the scientific community engaged in research and experiments including use of live animals. While the proposed legislation might effectively control the remaining small minority of scientists engaged in live animal experiments, we feel that this benefit would be far outweighed by the restrictions which it would impose on the majority of scientists. Accordingly, the National Aeronautics and Space Administration would not favor enactment of H.R. 3556.

The Bureau of the Budget has advised that it has no objection, from the standpoint of the administration's program, to the submission of this report to the Congress.

Sincerely yours,

PAUL G. DEMBLING,
Director, Office of Legislative Affairs.

Mr. ROBERTS. The subcommittee is highly honored this morning that we have with us the Honorable Maurine B. Neuberger, U.S. Senator, who has long shown an interest in health matters, and who has shown devotion to humane treatment of animals and has made for herself a great record in many fields.

I know that her time is very valuable and she is due over in the Senate very shortly, so I will, without further ado, call Mrs. Neuberger as our first witness.

It is certainly a pleasure to have you here.

STATEMENT OF HON. MAURINE B. NEUBERGER, A U.S. SENATOR FROM THE STATE OF OREGON

Senator NEUBERGER. Thank you, Mr. Chairman.

I hate to have it sound as if it is so important that I have to come on first, but, as you Members of Congress know, we are rushing toward adjournment, and votes are coming thick and fast this morning.

Before I make my contribution—and I hope it is a contribution—to the discussion of this bill, I must pay tribute to Christine Stevens who first introduced my husband to the need for legislation in this whole field and aroused my interest in it, too.

I must say when I was contacted about sponsorship on this bill, I was a little bit hesitant until I looked into the material. When I found that a bill on which this is modeled has been in effect, or legislation on which this is modeled has been in effect in Great Britain for 80 years, I thought what better laboratory do we have than to look to their experience with this sort of legislation. On reading it, I was very proud to add my name as a sponsor.

I was unfortunate enough to have to be in the hospital right after the end of Congress last fall. It was our teaching hospital in connection with the University of Oregon Medical School, where a great deal of research is done using animals. Various members of the animal laboratory, the Primate Center, the faculty of these organizations, would come into my hospital room to talk to me about both the Moulder bill and the bill of which I am the sponsor.

One of them said to me, "Well, you know, Senator, that no good research can be carried on on an animal that is not well treated. The result of our findings would be unproductive."

I said, "Well, then, you surely would not mind legislation which just guarantees that treatment."

Although they had sort of come to scoff, I found that when you really discussed it with them they were very receptive to my approach to this whole problem.

I am a sponsor in the Senate of legislation similar to that now before you which is aimed at providing for humane treatment of animals used in experiments and tests by individuals and groups who receive grants-in-aid from agencies of the Federal Government for scientific research, testing, and experimentation. It is a sad commentary on the state of our civilization that we in Congress have found it necessary to legislate in this field. From childhood, we are taught kindness to animals. It would seem that this training would make it unnecessary for Government to establish standards to prevent inhumane treatment of animals used in experiments as the result of negligence, laxity, or other causes.

It is generally recognized that those who use animals for experimental purposes do so because they expect to achieve results which will be of benefit to mankind. Perhaps we become too concerned about ends, rather than means. There is really no reason why the animals used for scientific purposes need be handled in a callous manner, nor why they cannot be insulated against painful procedures.

The measure which I am sponsoring in the Senate with Senator Joseph B. Clark of Pennsylvania is based on principles which have been used in Great Britain for more than 80 years. The British Cruelty to Animals Act grew out of a petition to Parliament sponsored by leading scientists of the day, including Charles Darwin and Thomas Huxley. An act was subsequently adopted in 1876 establishing the rights of laboratory animals. The British legislation provided for licensing of individuals who use animals for experimental purposes, inspection of recordkeeping by the Government, and minimum stand-

ards of care and comfortable housing of animals. The measure also established a "pain conditions" limit on the amount of suffering inflicted during experiments with animals. These are elements which require inclusion in our own approach to a solution of the problem.

I ask consent to include as part of my statement the publication entitled, "Notes on the Law Relating to Experiments on Animals in Great Britain," which was issued by the Research Defense Society of London.

Mr. Chairman, I have received a considerable volume of mail from doctors and researchers expressing opposition to the humane treatment legislation. They fear that Government reporting and inspection requirements will interfere with experiments or medical training. They claim that recordkeeping will subtract needlessly from valuable time which should be devoted to tests and experiments. As a sponsor of humane treatment legislation, I believe that this phase of the program, regulated by the Secretary of Health, Education, and Welfare, must be kept as simple as possible while providing adequate safeguards for the animals.

I would like to emphasize that the 80-year-old British law has not handcuffed scientific and medical progress. As a matter of fact, 11 British scientists have received the Nobel Peace Prize for Biology and Medicine.

I urge the favorable consideration by your committee of legislation which will assure American citizens that institutions or researchers aided by tax revenues give proper care and treatment to animals used to unlock the riddles of human illness. A civilized society can do no less for creatures of a lower order.

I ask unanimous consent to have printed in the hearings of this meeting the March–April information report put out by the Animal Welfare Institute of New York, which I think is one of the best summaries of the provisions of the British act on which we want to model our legislation that I have ever seen, and I think it would be an admirable contribution.

(The documents referred to follow:)

NOTES ON THE LAW RELATING TO EXPERIMENTS ON ANIMALS IN GREAT BRITAIN

(The Act of 1876)

Issued by

THE RESEARCH DEFENCE SOCIETY

11, CHANDOS STREET

LONDON, W.1

SECOND EDITION

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PREFACE

The Research Defence Society published the first edition of *Notes on the Law Relating to Experiments on Animals in Great Britain* in August, 1950. These notes were intended to simplify the task of obtaining licences and certificates for animal experiments, and to obviate delays which are likely to occur when incorrect applications are made to the Home Office. They received a warm welcome from members of the Society and from all whose work had to do with experimental animals.

The second edition has been largely re-written and, where necessary, brought up to date. Three main changes in Home Office practice have taken place during the last eight years. They have to do, respectively, with the interpretation of Section 4 of the Act (curare) ; with the taking of cinematographic records of experiments ; and with the licensing of technicians. The present practice has been incorporated in the second edition of these notes.

The Research Defence Society is pleased at all times to advise and, if possible, give assistance to licence-holders applying for certificates, and particularly if the licensee is informed by the Home Office that his certificates are to be submitted to the Advisory Committee.

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Honorary Secretary.

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An application form for membership of the Research Defence Society will be found at the end of this pamphlet.

THE ACT OF 1876

1. SCOPE OF THE ACT

Act 39 & 40 Vict., Ch. 77, usually referred to as The Cruelty to Animals Act (1876), regulates the use of animals for experiment. It is administered in England, Scotland and Wales by the Home Secretary. Similar legislation is in force in Northern Ireland, Isle of Man and Eire, and in certain other places. Licences granted by the Home Secretary and those granted elsewhere are not interchangeable.

Relevant extracts from the Act are printed on pages 6 and 7 of every licence. Experiments carried out under the Act of 1876 are expressly excluded from the operation of the Protection of Animals Act, 1911, and the Protection of Animals (Anaesthetics) Act, 1954.

The Cruelty to Animals Act, 1876, was based on the recommendations of a Royal Commission which was appointed in 1875. A further Royal Commission was appointed in 1906, and produced a report six years later. It took the view that the pursuit of knowledge must recognize a limit to the pain which shall be inflicted on an experimental animal, but that it would be inconsistent and unreasonable to impose a greater restriction upon the infliction of pain for the advancement of knowledge than public opinion sanctions in the pursuit of sport, in carrying out such operations as castration and spaying, or in the destruction of rabbits and of rats and other vermin by traps and painful poisons (see Final Report of the Royal Commission on Vivisection, published 1912, p. 64).

2. APPLICATION OF THE ACT

The Act refers to *experiments, calculated to cause pain*, on *living vertebrate animals* (other than man). A procedure, to come within the Act, must be *all* of these things ; if it is only some of them, it is outside the Act of 1876, although it may come within the provisions of some other Act.

The above terms are not defined in the Act of 1876, but the following may be taken as a guide to their interpretation.

An *experiment* is a procedure, the outcome of which is not known in advance ; the animal is being used to provide an answer to a question. The inoculation of horses with tetanus toxin, for the production of antiserum, is not an experiment, and is therefore outside the Act. Killing animals does not come within the Act ; but, by a recommendation of the Second Royal Commission, the pithing of warm-blooded animals (but not frogs) is regarded as an experiment under the Act.

A procedure is *calculated to cause pain* if it is liable to interfere in a material degree with the animal's health, comfort or integrity. The term " calculated " is employed in an unusual sense, and pain thus has a very wide meaning. The injection into animals of female urine as a diagnostic test of pregnancy may induce ovulation or spermatogenesis which are normal physiological processes and are not calculated to cause pain ; it is therefore outside the Act. The injection of sterile water into a mouse, to demonstrate a technique to students, is neither an experiment nor calculated to cause pain, and is outside the Act. The diagnostic inoculation of guinea-pigs with material that may be tuberculous, and which may therefore interfere with the animal's health, is regarded as coming within the Act.

An animal is regarded as *living* so long as it is breathing and its heart is beating and any part of its cerebrum and basal ganglia is intact. If the function of these is destroyed, even though circulation and respiration continue, it is regarded as dead. Experiments on pithed frogs, or on cats in which the cerebral hemispheres and basal ganglia are destroyed, are outside the Act.

A *vertebrate animal*, strictly speaking, should include all members of the sub-phylum *Vertebrata*, at any stage in their life cycle. However, practical difficulties arise in the case of larval, embryonic and foetal forms. In the absence of legal definition, one may be guided by a convention which excludes from the provisions of the Act larval forms of fishes and amphibia (tadpoles before metamorphosis) ; avian and reptilian embryos before hatching ; and mammalian foetuses which never achieve independent life *ex utero*, provided that the mother is counted as an experiment under the Act. In ambiguous cases the Chief Inspector at the Home Office should be consulted.

3. REGISTRATION OF PREMISES

The places where experiments under the Act are to be carried out are normally registered by the Home Secretary. There is no application form for this ; the person or body having authority over the premises—for example, the vice-chancellor of a university, a senior officer in a government department or research council, the chairman or secretary of a board of governors, management committee or firm, etc.—should write to the Under-Secretary of State, Home Office, Whitehall, London, S.W.1, requesting that the place be registered under the Cruelty to Animals Act, 1876. To make this request before the place is ready for use is premature, but if, during the planning or construction, advice is needed an informal approach may be made to the Chief Inspector about the likely requirements of the Home Office. These have been summarized in a memorandum entitled *Experiments on Living Animals—Registration of Premises*, which is obtainable from the Home Office.

4. LICENCE AND CERTIFICATES

A licence is needed to carry out experiments under the Act and, for certain procedures, certificates in addition.

When the licence is used by itself, every experiment so made is subject to certain restrictions, among which are the following :—

(i) The animal must be under the influence of an anaesthetic throughout the experiment. The Act does not define or qualify the term anaesthetic beyond that it should be of sufficient power to prevent the animal from feeling pain. A local anaesthetic in appropriate cases can satisfy this requirement.

(ii) The animal must be killed at the end of the experiment while still under the anaesthetic. Section 3, restriction (4), of the Act states that the animal must, if the pain is likely to continue after the effect of the anaesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anaesthetic which has been administered. In practice recovery is rarely permissible in experiments under licence alone.

(iii) The experiment must be for the advancement by new discovery of physiological knowledge or knowledge which will be useful for saving or prolonging life or alleviating suffering, in man or animals. Physiological knowledge is interpreted in the widest possible sense.

Any one of these restrictions may be raised, under the authority of an appropriate certificate. Thus, Certificate A releases the licensee from restriction (i) above ; Certificate B from (ii) and Certificate C from (iii).

Certificate A provides for experiments where an anaesthetic is not necessary or appropriate : such as inoculations, in which an anaesthetic would probably be a greater discomfort for the animal.

Certificate B allows recovery from an anaesthetic, provided that the animal be killed as soon as the object of the experiment has been attained.

Certificate C permits animals to be used in illustration of lectures to students or in demonstrations before learned societies. For such purposes the requirements of anaesthesia without recovery apply. The Royal Commission of 1906-1912 supported the absolute prohibition of painful experiments on conscious animals in illustration of lectures (Section 3, proviso (1)). There can be no objection, however, to allowing suitable persons to witness experiments performed in accordance with the provisions of the Act, whether under licence alone, or under licence and any certificate.

When horses, asses or mules are to be used for any procedure under the Act, Certificate F is needed, with or without other certificates. When dogs or cats are to be used for experiments under Certificates A or B, additional certificates E (with A) or EE (with B) are needed. These requirements are summarized in the Table.

TABLE SUMMARIZING THE REQUIREMENTS FOR LICENCE AND CERTIFICATES IN DIFFERENT CIRCUMSTANCES

Procedure	HORSES, ASSES AND MULES	DOGS AND CATS	ALL OTHER VERTEBRATES
Under anaesthesia without recovery	**Licence + Certificate F**	**Licence**	**Licence**
Under anaesthesia with recovery	**Licence + Certificates B & F**	**Licence + Certificates B & EE**	**Licence + Certificate B**
No anaesthesia employed	**Licence + Certificates A & F**	**Licence + Certificates A & E**	**Licence + Certificate A**
Lectures and demonstrations, under anaesthesia without recovery	**Licence + Certificates C & F**	**Licence + Certificate C**	**Licence + Certificate C**

There is no limit to the number of certificates which a licensee may hold.

In the strict legal sense, a licence is granted by the Home Secretary, and certificates are given by the statutory signatories, that is, by a president of one of a number of learned bodies, and a professor of a main branch

of medical science (see Section 11). There are special forms of application for both, which on completion should be sent to the Under-Secretary of State, Home Office, Whitehall, London, S.W.1. The Home Secretary then has the power to allow, disallow or suspend certificates—and may do so wholly or in part—but he has no power to extend the scope of certificates. In order to afford him the necessary time to consider a certificate the Act gives him a minimum of seven days but in practice it is usually longer than this before the licensee hears whether or not his certificate has been disallowed (Section 8). The Home Secretary invariably requires that no experiment under any certificate held by the licensee may be performed until he has been notified that the certificate has not been disallowed (Condition No. 2 attached to all licences). The Home Office will normally, if requested, deal with very urgent applications with the minimum delay permitted by the Act.

The Secretary of State grants licences and allows certificates on the advice of his inspectors. In a small minority of applications, when he is in doubt whether he should grant a licence or allow a certificate, he may refer the matter to an Advisory Committee. This Committee was set up on the recommendation of the second Royal Commission. The members are selected from a panel of names submitted by the Royal Society, the Royal College of Physicians and the Royal College of Surgeons, three members from each body, and, in addition, one nominee from the Royal College of Veterinary Surgeons : a judge of the High Court presides.

Licences and certificates are legal documents. They are personal to the holder, and delegation of authority under them is expressly forbidden, whether or not in his presence. It is stressed that there is no relaxation of the ban on delegation in experiments under Certificate C. The Home Office has given the following general guidance to licensees in the matter of interpreting the term delegation :—

(1) There is no delegation where two or more persons, each holding separate authority under the Act to perform a particular experiment, carry out conjointly the operative or other procedures involved.

(2) Where necessary a licensee may permit anyone to administer anaesthetics to an animal subject to his experiment.

(3) He may allow another person to carry out mechanical duties. Thus a licensee may, for instance, employ an assistant to hold an animal whilst he gives an injection or to administer a diet which he has prescribed ; or, whilst he carries out operative procedures, to control haemorrhage, hold retractors or to undertake equivalent subaltern duties.

(4) Subject to the above, the prohibition on delegation is absolute and a licensee may not allow another person, licensed or unlicensed, to take part in his experiments, even under his supervision or when he himself is present.

The Home Office looks to the licensee to give strict observance to the relevant extracts of the Act which accompany the licence ; to the conditions attached thereto ; and to the wording of the certificates, which admits of no latitude. Infringement may lead, and in some cases has led, to revocation of the licence. Action may also be taken against the laboratory authority which is responsible for the registered place in which the experiments are carried out. At the time of registration it is stated in a letter that the Secretary of State relies upon the co-operation of the laboratory authorities in requiring the strict observance within the registered premises of all the provisions of the Act and if he subsequently considers that his reliance has been misplaced, he may reasonably be

expected to take appropriate action, up to and including cancellation of registration. From neither of these decisions is there any appeal.

5. CONDITIONS ATTACHED TO LICENCES

Section 8 of the Act states that there may be annexed to such licence any condition which the Secretary of State may think expedient for the purpose of better carrying into effect the objects of this Act, but not inconsistent with the provisions thereof.

In practice, some ten conditions are attached to all licences, and are reproduced on pages 2-4 of the licence. Others may be added in special cases.

Condition No. 1 lists the places where the licensee may carry out experiments. These must be registered places, but in case of necessity special provision can be made for experiments to be done elsewhere, provided prior permission is obtained from the Home Office, and an additional entry is made under Condition No. 1 on the licence (see p. 11 below). This is to cover the possibility of diagnostic tests and other procedures having to be done in the field under conditions of urgency or for other reasons that preclude them from being done elsewhere.

It occasionally happens that a licensee wants to move an animal that is under experiment from one registered place to another. In such an event he should ensure that his licence is available at both places, and he should seek the permission of the Home Office before he moves the animal.

Condition No. 2 states that no experiment under any certificate held by the licensee may be performed until he has been notified that the certificate has not been disallowed by the Secretary of State. The submission of a certificate, duly signed, is thus not immediately followed by its coming into effect.

Condition No. 3, known as the pain condition, applies to all experiments under certificates A and B. It states that :—

(*a*) **If an animal at any time during any of the said experiments is found to be suffering pain which is either severe or is likely to endure, and if the main result of the experiment has been attained, the animal shall forthwith be painlessly killed ;**

(*b*) **If an animal at any time during any of the said experiments is found to be suffering severe pain which is likely to endure, such animal shall forthwith be painlessly killed ;**

(*c*) **If an animal appears to an Inspector to be suffering considerable pain, and if such Inspector directs such animal to be destroyed, it shall forthwith be painlessly killed.**

The pain condition epitomizes the purpose of the Act, and on its strict observance the whole administration of the Act depends.

Condition No. 4, known as the limitation condition, states that, under Certificate A, no operative procedure more severe than simple inoculation or superficial venesection may be adopted in any such experiments.

Condition No. 5 applies to all experiments under Certificate B. It requires that all operative procedures in connection with such experiments shall be carried out under anaesthetics of sufficient power to prevent the animal from feeling pain, and that the animals upon which experiments

are performed shall be treated with strict antiseptic precautions, and if these fail and pain results, the animal shall be immediately killed under anaesthesia.

Condition No. 6 applies to all experiments under Certificate C. It requires that on the completion of any such experiment the animal shall be killed forthwith by, or in the presence of, the licensee.

Condition No. 7 states that no experiment in which curare or other substances having similar curare-form effect upon the neuro-muscular system is used shall be performed without the special permission of the Secretary of State ; and forty-eight hours' notice of the performance of every experiment or series of similar experiments so permitted shall be given to the Inspector of the District. This condition does not apply to experiments on a decerebrated animal in which the cerebral hemispheres and basal ganglia have been destroyed.

This condition is based on Section 4 of the Act, which says that the substance known as urari or curare shall not for the purposes of this Act be deemed to be an anaesthetic.

Substances regarded as having a curare-form effect are those substances which, in the doses used, will produce motor paralysis without anaesthesia.

Condition No. 8 states that the licensee must keep a written record of all his experiments, which shall be open to examination by an Inspector at any time ; and he shall send to the Secretary of State within fourteen days at latest of the close of each year a report of the number and nature of all experiments performed during the year, and from time to time such other reports as may be required.

A record of all experiments being carried out under the Act should be available at all times in the laboratory or animal house ; either in the form of full details provided on the cage label or in the form of a record book to which cage labels refer. The form of record supplied with the licence to each new licensee is intended as a guide. Any suitable form of record keeping may be used, providing it gives at least as much information as is indicated on the official form.

About the middle of December of each year the Home Office sends to all licensees a special form on which an annual return is to be made.

Condition No. 9 states that in the event of descriptions of any experiment performed by the licensee and requiring a licence under the Act appearing in any medical, scientific, or other journal or magazine or in a report of any lecture delivered by the licensee printed for publication or private circulation, the licensee shall transmit to the Secretary of State, as soon as practicable after its appearance, the said journal or magazine, or the fullest of such printed publications or reports of lectures, accompanied by a letter drawing attention to the description of the experiments performed by him and stating when and where the experiments were performed. The submission of reprints, etc., *as they become available*, instead of at the end of each year, is particularly requested by the Home Office.

Condition No. 9a states that the licensee shall not permit any cinematograph film to be made which shows any animal, or a part of it, undergoing an experiment performed by him under this licence, except with the prior consent in writing of the Secretary of State and unless the person or body in whom the copyright of the film when made will be vested has,

before the film is made, agreed as part of the consideration for permission to make the film to observe such conditions respecting the use and exhibition of the film as the Secretary of State may have specified to the licensee in granting his consent as aforesaid.

The object of Condition No. 9a is to ensure that adequate steps are taken to prevent films of animals undergoing experiment from being shown to non-scientific audiences. The Secretary of State's consent under this condition may be sought in general terms and not only with reference to a particular film. Films showing only the apparatus used in the experiment, recording instruments, etc., are not subject to the terms of this condition.

6. OTHER PROVISIONS OF THE ACT

Section 6 of the Act states that any exhibition to the general public, whether admitted on payment of money or gratuitously, of experiments on living animals calculated to give pain shall be illegal.

Under this section it is not permitted for visitors to see animals under experiment, but this does not, of course, apply to the licensee's colleagues or assistants. Apart from this, only the Home Office Inspector has a legal right to see animals under experiment.

Section 10 of the Act requires the Secretary of State to cause all registered places to be from time to time visited by inspectors for the purpose of securing compliance with the provisions of the Act. Inspectors are appointed for whole-time duties. The second Royal Commission recommended that they hold medical qualifications and this recommendation has always been followed by the Home Office. It was endorsed in 1951 by the Howitt Committee. It has on several occasions been suggested that at least one Inspector should be a veterinary surgeon, but so far the Home Office has not seen any reason to depart from the principle that all the Inspectors should be medically qualified.

Section 21 of the Act states that prosecution under the Act against a licensed person shall not be instituted except with the assent in writing of the Secretary of State. It is doubtful if the Home Secretary has ever given this permission. The effect of this Section is to protect the licensee from irresponsible or malicious prosecutions.

In practice, the power to revoke a licence or cancel a registration is such a powerful sanction that the need to prosecute is most unlikely to arise.

Section 8 of the Act states that the Secretary of State may license any person whom he may think qualified to hold a licence to perform experiments under this Act. Graduate scientists are normally granted licences to do such experiments as their duties demand and their abilities allow. Licences may also be granted to technicians to carry out procedures, usually of a simple and repetitive nature, with which it would be unreasonable to expect a graduate scientist to occupy much of his time ; or to carry out simple procedures such as inoculations, in an emergency, in the absence of a graduate licensee. Licences granted to technicians may carry a condition excluding all but a narrow range of appropriate procedures, and requiring these to be done under the general supervision of a senior person. In certain circumstances Home Office may grant licences to senior students working for, say, honours degrees in order to enable them to carry out experiments that are a necessary part of their syllabus. Such licences will normally have a supervision condition attached.

7. ON FILLING IN FORMS

Forms of application for licence and certificates are obtainable from H.M. Stationery Office at :—

York House, Kingsway, London, W.C.2
13a Castle Street, Edinburgh, 2
39 King Street, Manchester, 2
2 Edmund Street, Birmingham, 3
1 St. Andrew's Crescent, Cardiff
Tower Lane, Bristol, 1

or through any Bookseller. They cost, respectively, 4d. and 3d. each.

On completion by the applicant, the form must be signed by a professor in some branch of medical science and a president of one of certain named bodies, in accordance with Section 11 of the Act, and then submitted to the Home Office.

The Research Defence Society will gladly help applicants to obtain and complete forms and advise them about obtaining the appropriate signatures.

If applications for licences and certificates are incorrectly presented, this may result in delay in their being granted and approved and cause much avoidable trouble to the applicant, the signatories and the Home Office.

The following notes are designed to obviate this : **they are complementary to, and should be read in conjunction with, those printed on the forms of application for licence and the various certificates.** If any doubt exists, the Home Office Inspector may be consulted.

Whenever a new certificate is submitted, or the location of the licence is to be amended, **the licence must be forwarded to the Home Office.**

(1) Application for Licence

" Places at which it is proposed to perform the experiments " (p. 2). These must be registered places as a rule ; but in certain cases a licence may be made available " *at such other places, not being registered places, as may be necessary (in experiments under Certificate.....) provided the Inspector be given sufficient notice of the performance of any such experiments to enable him to be present if he so desires.*" If, later, additional or alternative places are required, the licence must be sent to Home Office for endorsement before it is valid at the new places.

" Nature of proposed experiments " (p. 3). The licence by itself covers only experiments during the whole of which the animal is under an anaesthetic, from which it does not recover. In practice, the licence, when granted, covers experiments on any animals (other than horses, asses or mules) which are so conducted ; for this reason, a broad description only is required here.

(2) Certificate A

Certificate A deals with experiments where an anaesthetic is unnecessary. It covers minor manipulations and procedures ; under " description of experiments to be performed " these should be specified in terms such as " *injection*," " *inoculation*," " *withdrawal of body fluids*," " *administration of substances by enteral or parenteral routes*," " *exposure to rays,* to infection, to variations of temperature* or atmospheric pressure,**"

* The circumstances necessitating these procedures should be explained and also the upper and lower limits of temperature and pressure and of irradiation dose.

"*feeding experiments, the animal being allowed to satisfy hunger and thirst*," or any operative procedure not more severe than simple inoculation or superficial venesection (condition No. 4 of licence). As such procedures are common to a wide range of investigations the object may be stated in broad terms. If an anaesthetic is administered for any purpose whatsoever (e.g. to immobilize the animal, even though the operative procedure is within the limitation condition) then the experiment cannot properly be carried out under Certificate A.

Under " animals to be used," it is seldom necessary to designate particular species. Unless it is intended to use dogs or cats (which require Certificate E in addition), or horses, asses or mules (Certificate F), these species must be excluded on the certificate : in this case " *vertebrates except dogs, cats, horses, asses and mules* " is generally acceptable.

(3) CERTIFICATE B

Certificate B deals with experiments under anaesthesia from which the animal is to be allowed to recover. It is appropriate to minor procedures which are carried out under anaesthesia, such as intracerebral inoculation, biopsy and the like ; but its main purpose is to cover surgical operations of a more or less severe nature. These must be accurately indicated under " description of experiments to be performed " and it is important that the words shall not bear a meaning wider than that intended (e.g. where only biopsy is intended this should be stated). The species or class of animal must be named ; dogs and cats require in addition Certificate EE, and horses, asses and mules Certificate F, but if these animals are not to be used they must be excluded. When describing the object, the specificity should be proportional to the severity of the experiment.

(4) CERTIFICATE C

This covers experiments not for the purpose stated in (iii) above (p. 6), but to illustrate " lectures in medical schools, hospitals or colleges, or elsewhere." (Section 3, proviso (1)). The conditions as to anaesthesia are the same as under licence alone, and no experiment or demonstration done under Certificate C may be carried out on the conscious animal. Delegation is not permitted (see p. 7). A description of experiments in very broad terms suffices—e.g. " *experiments to demonstrate the fundamental facts of physiology and pharmacology*."

Certificate C also applies to experiments carried out before learned societies. It is necessary to state on the Certificate the place where the experiments are to be performed. In the case of demonstrations before learned societies, this may well differ from the place of work of the licensee (at which his licence is available) and to save having to obtain a fresh Certificate C whenever such an occasion arises, the following wording (in italics) may appear on the Certificate :—

(*a*) Places at which the experiments are to be performed.

" (i) (State here the place at which teaching experiments are normally carried out ; the licence must also be available there.)

" (ii) *Meetings of learned societies held in premises registered under the above Act*."

(*b*) Description and object of experiments to be performed.

" *Demonstrations :*

(i) *To students of science or medicine at the place first named above, of the fundamental facts of physiology and/or pharmacology.*

(ii) *To members of learned societies, of newly discovered physiological facts or facts which will be useful to them for saving or prolonging life or alleviating suffering.*"

(*c*) Persons before whom the proposed experiments are to be performed. " *Students of science and medicine ; members of learned societies.*"

The Home Office will require that on each occasion of the licensee's intention to carry out experiments under (*a*)(ii) or (*b*)(ii) above, notice be given, and this will be stated in Condition No. 1 of the licence.

(5) CERTIFICATES E, EE AND F

The purpose of these certificates is sufficiently explained above and in the official notes printed at the head of each certificate form. It is essential that the " description of experiments to be performed " be in the same terms as in the Certificate A or B with which E, EE or F are to be combined. E accompanies A ; EE accompanies B ; F may accompany either, or both, but in the latter case it is better to submit two F's, one to go with A and one with B.

(6) UNDERTAKING

In certain cases the Home Office may require some senior person to give an Undertaking that he will make himself responsible for the proper observance by the applicant of the provisions of the licence. This Undertaking is in set form, obtainable from the Home Office. (See Appendix I.)

As a general rule an Undertaking is required on behalf of all applicants from overseas. The Undertaking should normally be signed by the head of the department in which the applicant is to carry out his experiments, or by some senior person with whom he will be working.

(7) ANNUAL RETURN OF EXPERIMENTS

About 15th December, the Home Office sends out a form for the Annual Return of Experiments. This form is in the main self-explanatory, but the following suggestions may help (in any case of doubt reference should be made to the Inspector) :—

(*a*) *One animal normally counts as one experiment.* Certain trivial procedures (under Certificate A) may leave the animal at the end of the experiment entirely normal ; if such an animal is subsequently used again then it is counted as another experiment.

(*b*) If an experiment involves procedures under more than one type of certificate, it should be shown on the return as coming under the certificate covering the more severe procedure. For example, an animal prepared by means of an operation under Certificate B and then injected under Certificate A counts as a single experiment under Certificate B.

(*c*) An experiment starts at the first interference with the animal's health, comfort or integrity and ends on the death of the animal, or its complete recovery and return to stock (this can only happen in the case of experiments under Certificate A).

(*d*) Where an experiment is carried out by more than one licensee, it must be shown in the annual return as a conjoint experiment ; unless,

of course, the experiment was performed in the main by one licensee only, the others taking part in the capacity of assistants, in which case the experiment should be attributed to the principal licensee only. Care should be taken that, in such cases, the returns submitted by the respective licensees tally one with another.

A very useful memorandum dealing with this question in more detail has been prepared by the Home Office. It is entitled *Notes on Plurality of Experiments* and may be obtained from the Inspector.

APPENDIX I

39 & 40 VICT., CAP. 77

UNDERTAKING

WHEREAS .....

(*Full name of applicant for licence in block letters*)

proposes, if duly authorized by the Secretary of State, to carry out certain experiments on living animals under my supervision,

Now I .....

of .....

.....

hereby undertake, in the event of a licence being granted :—

(1) To explain the provisions of the Act to the licensee and to impress on him the importance of observing strictly the provisions of the Act and the terms and conditions of his licence ;

(2) To see, to the best of my ability, that the provision of the Act and terms and conditions of the licence are so observed ;

(3) To see that when he ceases to require the licence, and in any event before he leaves the country, he makes a Return (on the form used for the annual Return of Experiments) of every experiment he has carried out since the beginning of the year.*

(4) Generally to make myself responsible for the due observance of the act by the licensee, and to see that his record of experiments is kept correctly and up-to-date.

I understand that it will be made a condition of the licence, if granted, that all experiments shall be carried out under my supervision ; and I understand further that if the experiments are not conducted strictly in accordance with this Undertaking, the licence will be liable to revocation.

(Signature) .....

Date .....

* The form for this purpose is sent to him with his licence.

APPENDIX II

ON PURCHASING DOGS AND CATS FROM DEALERS

Dogs seized by the police under the authority of the Dogs Act of 1906 may not "be given or sold for the purposes of vivisection." They could conceivably be handed over for laboratory procedures outside the Act of 1876, for example, the preparation of distemper vaccine, but in practice this has never so far been done. This ban does not apply legally to cats, but in effect stray cats are equally inaccessible. There is consequently an ever present danger that cats and dogs offered by dealers may be stolen animals, and laboratory workers are advised to take every precaution against being incriminated in this way. The practice in many laboratories is to require the dealer to sign a statement to the effect that the animal which he is selling is his own property ; the following is a suggested form of undertaking for such a guarantee :—

"I certify that these ..... are my own property and have been obtained by legal means.

Signed ....."

If a further safeguard is thought necessary, the dealer may be asked to state the source of each animal.

Please pass this form on to a prospective new member

Research Defence Society Membership Form

THE Research Defence Society, founded by Stephen Paget, F.R.C.S., in January, 1908, exists to make known the facts about experimental research involving the use of animals and the conditions and regulations under which animal experiments are conducted in the United Kingdom ; to emphasize the importance of such experiments to the welfare of mankind and animals and the great saving of human and animal life and health and the prevention of suffering already due to them ; to defend research workers in the medical, veterinary and biological sciences against attacks by anti-vivisectionists ; and to help workers in drawing up their applications to the Home Secretary for the licence and certificates needed for the proper conduct of experiments on animals.

In pursuit of these objectives, the Society watches all proposed legislation likely to affect the work it exists to protect and also keeps an eye on the Press, national and local, daily and periodical, with a view to countering the more unscrupulous or ill-informed attacks of the anti-vivisectionists, recently declared by the House of Lords not to be engaged in " charitable " work. The Society is also able to arrange for lectures to be given by well-known members on its behalf.

The Society's journal *Conquest* and other publications are supplied without charge to all members.

Subscriptions are as follows : Life Membership, £5 5s. ; Full Membership, 10s. per annum ; Student Members,* 5s. per annum. Membership is open to all interested in forwarding the Society's objects.

* Persons working for degrees or diplomas in any of the medical, veterinary or allied sciences.

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THE RESEARCH DEFENCE SOCIETY

THE Research Defence Society, founded by Stephen Paget, F.R.C.S., in January, 1908, exists to make known the facts about experimental research involving the use of animals, and the conditions and regulations under which animal experiments are conducted in the United Kingdom ; to emphasize the importance of such experiments to the welfare of mankind and animals and the great saving of human and animal life and health and the prevention of suffering already due to them ; to defend research workers in the medical, veterinary and biological sciences againt attacks by anti-vivisectionists ; and to help workers in drawing up their applications to the Home Secretary for the licence and certificates needed for the proper conduct of experiments on animals.

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[From Information Report, Animal Welfare Institute, March–April 1962]

Senator Clark Introduces Bill for Humane Treatment of Laboratory Animals

Senator Joseph S. Clark, of Pennsylvania, introduced into the U.S. Senate on March 28 S. 3088 for the humane treatment of experimental animals, a companion bill to H.R. 1937. Senator Clark's bill has been referred to the Committee on Labor and Public Welfare. Hearings on the identical bills can now be scheduled by either Senator Lister Hill, chairman of the above-mentioned committee, or by Congressman Oren Harris, chairman of the Committee on Interstate and Foreign Commerce of the House of Representatives, before which H.R. 1937 is pending.

Senator Clark introduced S. 3088 after careful consideration as a matter of conscience. In view of the fierce opposition the proposal has aroused, his humaneness and courage are worthy of the greatest respect and his work deserves the active support of all humanitarians.

Introduction of S. 3088 calls for a statement on the provisions of the bill and the principles upon which it is based. These principles have stood the test of time in a nation renowned for the wisdom of its lawmaking, the achievements of its scientists, and the humaneness of its attitude toward animals. The British Act of 1876 stands as the most just and humane law on animal experimentation ever enacted. The eight major points listed below are incorporated in the companion bills now pending in Congress, S. 3088 and H.R. 1937.

BASIC PRINCIPLES OF THE BRITISH ACT WHICH HUMANELY REGULATES EXPERIMENTS ON ANIMALS

The act is based on the principle that the infliction of suffering is, in itself, wrong but that, within limits, it should be allowed as a special privilege to highly trained persons of serious purpose for needed work which can be accomplished only in this way. Following is a summary of the means by which this has been brought into practice by law in Britain.

(1) Licensing: Each scientist who uses animals for experimental purposes is individually licensed and responsible for the animals he uses. Each laboratory where animals are used is registered.

(2) Inspection: Well-qualified inspectors under the direction of a chief inspector have access to laboratories and records and make unannounced inspections.

(3) Pain rule: The pain conditions limit the amount of suffering inflicted.

(4) Care and housing: Minimum standards of care and comfortable housing are required.

(5) Records: Records adequate to allow the inspectors to enforce the law are required. These include: (a) submission of the plan of work showing that it has genuine scientific need to be done and has been planned as humanely as possible; (b) identification of animals used and their disposition; and (c) a brief annual report.

(6) Student work: Student work, as distinct from research conducted by qualified scientists, must be painless.

(7) Scope: The act applies to all vertebrate animals.

(8) Enforcement: Compliance with humane principles is obtained because experimental plans may be disapproved on humane grounds and because a scientist's license may be suspended or revoked for failure to comply.

The British act is administered by the Home Office. It is a criminal statute; however, its enforcement has relied on the licensing system rather than on prosecution. S. 3088 and H.R. 1937 were drafted to follow this time-tested example. The purpose of the measure is to provide an effective incentive for humane planning of experiments and to prevent needless suffering before it takes place rather than to aim at punishment after the event.

For this reason, each scientist who uses animals would be licensed. His plan for an experiment or series of experiments would be submitted to the Secretary of Health, Education, and Welfare. Unless disapproved at once by the Secretary, the licensee would be at liberty to proceed. Contrary to assertions made by opponents of the measures, there is no requirement for prior approval, and hence the specter of protracted delay is purely imaginary.

Another groundless fear which the opponents have sought to instill in the minds of scientists is that of a great burden of paperwork. S. 3088 and H.R. 1937 call for less recordkeeping than the British act, and as Dr. Leon Bernstein,

who for 18 years did physiological research and teaching under the act, wrote, "The formalities involved are trivial: I do not recall that in my own case they ever occupied more than 1 minute of my time for each experiment I performed, and perhaps 30 minutes for the completion of the annual report." [1]

The purpose of the pain conditions attached to all British licenses is to prevent animals from dying slowly in agony and to limit, so far as possible, lesser suffering. S. 3088 and H.R. 1937 require that "animals which are suffering severe and prolonged pain shall be painlessly killed."

Regarding care and housing of experimental animals, S. 3088 and H.R. 1937 require: "(a) All premises where animals are kept shall provide a comfortable resting place, adequate space and facilities for normal exercise, and adequate sanitation, lighting, temperature control and ventilation. (b) Animals shall receive adequate food and water and shall not be caused to suffer unnecessary or avoidable pain through neglect and mishandling."

All institutions supported in whole or in part (through grants) by Federal funds would be required to observe the humane conditions, and all scientists in these institutions would be licensed.

A SHIFT IN POSITION BY OPPOSING FORCES

When legislation providing for the humane treatment of experimental animals was first introduced in the 86th Congress, organized scientific opposition took the position that it was unnecessary—that all was well with the animals in laboratories and only crackpots could think otherwise. Now, however, it is generally conceded that something needs to be done—but, according to the opponents, it must not take the form of mandatory law. Like the meatpackers (who managed to delay humane slaughter legislation for more than a quarter of a century by this simple expedient) they plan to set up a committee which, it is asserted, will bring about the necessary improvements in the treatment of experimental animals by voluntary means.

Virtually any effort to raise standards in laboratories is welcome, for there is a vast amount of work to be done, but to suppose the animal facilities certification program of the Animal Care Panel could be a substitute for needed legislation would be naive in the extreme.

Even on the lowest level—the kindergarten of humanitarian thinking, so to speak—the Animal Care Panel has demonstrated inability to progress, as witness the recent reprinting (June 1961) in its journal, The Proceedings of the Animal Care Panel, of the discussions which took place at its first meeting in 1950. Comments of some of the panelists on the prolonged caging of dogs are quoted below:

"Dr. BREWER. We have kept dogs in cages as long as 5 years with only occasional release. It is emphasized that such long confinement is not common and is used for such as 'blue baby' dogs. Of course, these dogs are exercised, but they are not taken out of the cages for that purpose regularly. * * *

"Comment: At Illinois, dogs have been kept in cages for as long as 7 years, especially those dogs used in hypertensive studies. These dogs like their cages and are unhappy elsewhere excep twhen being observed or handled by the investigator.

"C. C. HARGREAVES. We have also kept dogs in cages for 7 years. * * *

"H. H. STRUCK. If you provide a 5 by 5 by 10 pen for each individual dog you have to provide too much space. Most dogs are content with a cage, especially if you walk them every couple of days. In our case, we have cages in three tiers. * * *"

It might have been hoped that after 11 years of activity on the subject of animal care a change of heart could have taken place among ACP policymakers—a little pity for the dogs caged 7 long years, even a little generosity in emulation of the generosity of Congress in providing several thousand percent more money to experimental laboratories in recent years.

NEED FOR LEGISLATION IS CLEAR

How could an honorable Member of Congress accept ACP accreditation as a guarantee against the infliction of needless suffering on the millions of animals now being purchased by laboratories with money provided by the taxpayers?

By the same token, how could a Congressman accept the statement now

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[1] For Dr. Bernstein's full letter, see Information Report, vol. 10, No. 3.

being sent out by public relations personnel for the U.S. Public Health Service, Division of Research Grants, National Institutes of Health, that: "The Public Health Service has long observed the most humane rule possible—that an animal be used for experimental research only when no other feasible and satisfactory method is available." If they have already been doing this, why object to legislation which uses these very words?

The fact is, however, that even the American Medical Association is sharply criticizing the wastefulness of the National Institutes of Health. An article in the April 13, 1962 issue of the Wall Street Journal states in part: "The [AMA] journal noting a sharp increase in Federal spending on medical research in recent years, claimed it is 'probable' that 'huge sums of money are spent on doubtful, artificially blown-up, occasionally ridiculous projects * * * far too few people have realized that the stepped-up efficiency with which these sums are raised does not necessarily mean that they are equally efficiently spent.' The journal warned medical school administrators to be on the watch for unwise use of research grants on unscientific projects, to watch for 'grant eaters' and to guard against what it called 'scientism.'"

The journal of the AMA gives the following description: "Scientism is not easy to define, but it is not hard to recognize. Research administrators get it and it spreads like wildfire. Its epidemiology and statistical significance are now being studied; but much committee work is still needed to define it as a syndrome. A true scientist, a true educator, or a trained practitioner of medicine is immune. But it does infect people who are none of these. The disease is highly infectious, is spread by seminars and workshops, by mail and telephone. Only withdrawal of grant money, with proper diversion of funds elsewhere, can dry it up. Like a fungus it remains dormant until suddenly wetted by a skillful 'grant eater.' Scientism may be defined as 'grant getting by wisdom of application'—a combination of pseudoscientific, pecuniary pedantry and integrated cooperative research based all too often on irrelevant or misinterpreted data, and compounded by mass computer techniques."

The National Institutes of Health have failed signally to bring about humane treatment of animals in institutions to which it makes grants (see Information Report, vol. 11, No. 1). There needs to be legislation administered entirely separately from the NIH to require decent treatment of these animals. A chief inspector or administrator working directly out of the Office of the Secretary of Health, Education, and Welfare, with a small group of fulltime inspectors located in different parts of the country, could do this work effectively. Because they would be enforcing Federal law specifically designed to prevent needless suffering in laboratories, they could be expected to become (like their counterparts in Great Britain, all of whom are medically qualified), experts on humane technique of equal help to the animals and the scientists. Of interest in this connection is a comment by Prof. R. J. Harrison of the London Hospital Medical College: "On two important occasions the Home Office made suggestions of the very greatest help and significance which materially increased the standard of the research and the importance of the results."

Contrast this with the shockingly ignorant statement which appeared in "Research Highlights. National Institutes of Health, 1960. Items of Interest on Program Developments and Research Studies Conducted and Supported by the Institutes and Divisions of NIH, as Presented to the Congress of the United States, U.S. Department of Health, Education, and Welfare, Public Health Service." On page 271 of this document, it is reported: "Data were obtained from 40 adult cats anesthetised with Nembutal or curare preparations." Confusion between anesthetics such as Nembutal (which render animals unconscious and unable to feel pain) and muscle relaxants such as curare (which leave the animals conscious but paralyzed so that they are unable to move or make a sound) is inexcusable. A recent editorial in *Anesthesiology* (September–October 1961) states in part: "Other researchers may have immobilized animals with muscle relaxants rather than anesthetic agents. This procedure is unwarranted and to be condemned. Quite likely, however, many investigators are uninformed as to adequate anesthetic procedures in animals which would obtund or eliminate pain and discomfort without interference with results of the experiment." [2]

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[2] The editorial suggests that a book be written by anesthesiologists on anesthetics for animal experiments. The AWI hopes a complete text will be prepared on all species commonly used in laboratories and calls attention to "An Introduction to the Anesthesia of Laboratory Animals" by Phyllis Croft, Ph. D., M.R.C.V.S., available from the AWI for $0.50. This covers the smaller species.

IMMOBILIZATION OF UNANESTHETIZED ANIMALS

Immobilization of conscious animals by means of physical restraint has become commonplace. The cruel, old punishment of putting men in the stocks has found a new expression in the monkey chair, the various similar restrainers for rabbits, hamsters, and rats which are advertised and publicized, and, to a somewhat lesser degree, the Pavlov stand and similar restrainers for dogs.

The passionate protest of a dog against his stand is described by Pavlov in his "Conditioned Reflexes" and after describing how he "inhibited the freedom reflex" by withholding all food from the dog except when it was in the stand, how it lost much weight, but finally gave in, he states: "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. * * * Some animals as we all know have this freedom reflex to such a degree that when placed in captivity they refuse all food, sicken and die."

It is not the purpose of the AWI to condemn all use of physical restraint. Rather, it is the purpose to call attention to increasingly widespread use of methods which should be used only when they are absolutely necessary, and further to ask humane scientists to consider whether these and other distressing experimental procedures are being used casually as a matter of course, without serious effort on the part of users to substitute more humane experimental design.

Letters to the AWI from experienced scientists concerning ill-planned and useless research confirm the comments quoted earlier from the AMA Journal. With this thought in mind, we quote excerpts on methods reported in The American Journal of Physiology. In making this presentation it is emphasized that no judgment is being made on the value of any of the experiments mentioned. They are selected simply to illustrate types of experimental procedure which we hope most scientists agree should not be undertaken lightly.

"Five rhesus monkeys (3–4.5 kilograms, four males and one female) had stainless steel electrodes implanted stereotaxically with a Labtronics instrument. * * * The animals were maintained at all times in primate chairs.

"* * * In the absence of lever pressing a 10-milliamperes shock, preceded by a 10-second warning clicker, was delivered to the monkey's feet every 40 seconds and lasted for a maximum of 15 seconds. Each lever press, however, postponed the shock for 40 seconds. * * *

"* * * Since the animals were well trained on an avoidance schedule, any painful or unpleasant stimuli could be expected to reinstate and sustain avoidance responding. Stimulation of the medial forebrain bundle area did not produce this effect. * * *" (American Journal of Physiology, October 1960).

It should be noted that the monkeys were maintained at all times in primate chairs, that is, in a sitting position with the head protruding through a hole in a plastic slab. The above and the following experiment describe stimulation. Stimulators are commercially produced and advertised, and one of the numerous models is recommended in the promotional literature as follows: "The controls are sufficiently uncomplicated for undergraduate student use, yet the range of variables is such that the '751' is quite at home in the research lab. Stepped controls of frequency and duration allow resetting to provide consistent, repeatable experiments."

Another experiment using the combination of stimulation with physical restraint of unanesthetized cats is described in the January 1961 issue of the journal. It states, in part: "The first animals were restrained by means of a wide leather collar. This method was inadequate since some head movement was possible and also because struggling soon commenced and prevented adequate recording. Plaster casts were individually fitted for all succeeding cats. The casts were cut along the midline to provide two close-fitting shells and, prior to each testing, the animals were replaced in the casts. Infrequently a brief period of anesthesia, induced by trichloroethylene inhalation, was required for recasting untamed cats. * * *

"Rigidly restrained monkeys assume a sleeplike state, and arousal is difficult to maintain. Cats in this experiment responded in a similar fashion * * *

"* * * the application of shocks throughout a series of trials with systematic adjustment to produce a flat EEG pattern accompanied by frequent vocalizations should have insured general arousal * * *

"* * * severe measures are taken to maintain arousal."

In addition to the above procedures, these cats also had had sets of electrodes implanted in their heads and were being rotated in the dark. It would be hard to think of a series of experiments more abhorrent to this species of animal.

Having both hind legs immobilized with steel pins for 101 days till they atrophied (American Journal of Physiology, May 1961) was a procedure undergone by a diffierent group of young experimental cats.

DEATH BY STARVATION OR DEFICIENCY

In another experiment, weanling kittens were slowly killed by feeding them an inadequate diet. The authors report (American Journal of Physiology, January 1961): "The effects of the pyridoxine-free diet were quite striking. Within 4 to 6 weeks the deficient animals exhibited lack of weight gain, loss of subcutaneous tissue, coarseness and thinning of the body hair, and progressive ataxia. Ultimately the deficient animals became progressively weaker, developed generalized seizures, and, if left on the diet, died * * *.

"Approximately 25 kittens were started on the deficient diet. Of these only 11 were available for final study. The other 14 died after rapid onset of seizures before the studies could be performed, from intercurrent infections, or, in one case, from trauma resulting from falling in the cage." This piece of research was carried out at the NIH's own laboratories in Bethesda.

"In the following, we report results on gastric ulcers in mice, subjected to prolonged, continuous starvation." With these words the authors (American Journal of Physiology, March 1960) introduce the account of their treatment of 120 mice, 24 of which they hoped would be pregnant (12 actually were). "During starvation, the mice lost approximately 40 percent of body weight." The authors state that in examining the stomachs, "if too much hair or feces were present, results were discarded." This desperate attempt to fill their stomachs with anything brings to mind the restraining cages advertised by their manufacturers as preventing animals from attacking tubes and other fixtures."

Dogs can stand the deprivation of food for much longer periods than such small animals as mice. Even following severe surgery, some of them survived fasts up to 6 weeks. The American Journal of Physiology, October 1957, tells how the dogs were subjected to two separate operations in which the surgical mortality was described as so high that "the animals were not studied or standardized before surgery" ("complete bilateral paravertebral ganglionectomy and denervation of both adrenal glands.") It is reported that "one dog died during the first fast and another during the first realimentation with casein." For when the dogs were finally allowed food, it was not a balanced diet. One was calculated to "show many features characteristic of a rather severe alarm reaction." The authors report that "Selye states that fasting is an alarming stimulus and sensitizes the animal to other alarming stimuli." The dogs, now having been subjected to two major operations, starvation up to 6 weeks, and feeding with an improper diet, "dermatitis, cutaneous ulcerations and alopecia" in the sympathectomized dogs "were much more frequent and often intense." The authors show their familiarity with starving dogs, stating: "Normal, healthy dogs tolerate prolonged fasting surprisingly well. During the first 2 or 3 weeks they frequently appear stimulated and are unusually playful and lively, later their reactions are slowed but they are usually in good condition for as long as 5 to 6 weeks."

BURNING

Pain-relieving drugs are especially needed when burns have been inflicted; anesthesia at the time of infliction is essential. Yet both these means of preventing extreme suffering are omitted in some experiments. For example: (American Journal of Physiology, March 1960) "Dogs closely clipped and shaved the day before the experiment, were anesthetized (pentobarbital sodium 30 milligiams/kilograms, the required vessels cannulated, and the determinations accomplished. The dogs were then blackened with powdered lamp black and 30 percent of the calculated body surface burned at an intensity of 4.4 cal./cm.^{2}/sec. for 5 seconds (22 cal./cm.^{2}). The determinations were then repeated 1, 3 and 5 to 6 hours following the injury. All blood removed by sampling was replaced by an equal amount from a donor dog. In some dogs morphine (0.5–1 milligrams/kilograms) was administered immediately after the 1-hour measurements." On the next page the statement is made: "The response of plasma volume and red cell mass to the injury was not modified by morphine." Nevertheless, out of 29 dogs used, only 6 received morphine.

The same authors in a second paper (ibid) state of the time following the 5 to 6 hour period after the burn of about one-third of the dog's body: "After this time blood pressure usually shows a gradual decline until death finally ensues." Apparently, the animals were not put out of their misery but allowed to die of the burns without sedation of any kind even after the last (5 to 6 hour) measurements were made.

An example of burning with no anesthetic may be found in the American Journal of Physiology, October 1957, in which the authors state: "In order to obtain plasma from burned rats, unanesthetized animals were strapped by the legs to a wooden board and dipped into boiling water up to the rib cage for 5 seconds. They were removed from the board immediately after burning. After a 15-minute interval, the rats were lightly anesthetized with ether and bled in the same manner as described for the control animals."

The authors make these comments: "Due to evidence of the protective action of anesthesia against burn, the animals were not anesthetized * * *."

Another kind of burning with microwaves is described in the American Journal of Physiology (August 1961): "Adult mongrels of either sex 1 to 5 years of age, were exposed to 2,800 megacycles per second pulsed microwaves * * *.

"To study thermal regulation, dogs were maintained in an environment of 120 F. 50-percent humidity or 103.5–105 F. 20 percent humidity for varying periods of time. Some dogs were exposed to 2,800 magacycles per second microwaves while in the 103.5–105 F. environment * * *.

"Clinical response: The dog pants as soon as irradiation starts. As exposure continues, the rate of panting increases and may stabilize only to increase again as the rectal temperature rises. Salivation occurs in many dogs, the amount increasing with the duration of exposure. Most animals display increased activity, varying from restlessness to extreme agitation. In all but terminal cases the dogs are alert throughout the exposure. Marked vasodilation of the skin and mucous membranes is observed. Terminally (4–6 hours at 100 mw./cm.^{2} or 2–3 hours at 165 mw./cm.^{2}) weakness develops and, in extreme cases, the dog becomes prostrate. Recovery, when it occurs, is gradual. Except in extreme cases where water is ignored, thirst is increased.

"Exposure of rabbits at 165 mw./cm.^{2} produces an extremely violent reaction. Within 5 minutes, desperate attempts are made to escape from the cage. Peripheral engorgement of all vessels yields an acrocyanotic picture. The ears develop a fried or cooked appearance. Forty minutes of exposure results in death. When rabbits are exposed at 100 mw./cm.^{2} for 1 hour they become prostrate. * * *

"Temperature response: * * * in the dog * * *. In phase III, period of thermal breakdown: the temperature rises above 106° F., continues increasing rapidly until a critical temperature of 107° F., or greater, is reached. If exposure is not stopped, death will occur. * * *

"Burns: Dogs may develop superficial burns on various portions of the body, but particularly on the thoracic cage (fig. 3). Five to six days following exposure, the affected skin sloughs, leaving a deep, clean, noninfected area identical in appearance with a third-degree burn. The central portion appears to devitalize with development of a process not unlike dry gangrene. * * *

"Exposure of the head with continuous wave 2,800 megacycles per second, invariably resulted in marked swelling of the tongue, with production of numerous vesicles containing serous fluid. There were burns of the skin, subcutaneous tissue, and muscles of the exposed area."

STRESS

Stress has become a popular term, and it has invited mistreatment of animals in order to induce it. For example, in order to stimulate lactation in 60 virgin female rats, groups of the animals were subjected to "severe cold (0° C.) 24 hours per day; intense light and heat (35° C.) produced by placing two 150-watt reflector floodlights over the cage containing the rats for 12 hours per day; restraint produced by wrapping the tails or hind legs of the rats with several turns of masking tape, and then taping the tails or hind legs of 5 of the animals together for 12 hours per day. This procedure greatly hindered the movement of each animal and resulted in considerable fighting among the rats. Preliminary trials with simple restraint, produced by securing the forelegs of the rats to their thorax by several turns of masking tape, showed that this was not a severe enough stress to initiate lactation; therefore the more severe method was adopted: starvation, with no food or water for 5 days; subcutaneous

injection 0.1 or 0.2 cubic centimeters 10 percent neutral formaldehyde to five rats each." The rats underwent this mistreatment for 16 days before being killed (American Journal of Physiology, May 1960).

In another experiment, a series of amputations of incisors and a daily ulceration of oral mucosa was tried on groups of young rats. The authors state that "a severe form of ulceration was produced by daily application of high frequency, coagulating electric current to the oral mucosa adjacent to the lower incisors," and that "In the same experiment other rats were subjected to repeated amputation of the lower incisors, and the usual results were obtained." In most of the experiments the incisors were amputated with toenail clippers just level with the gums for maximum exposure of the pulp of the tooth. The authors say their studies suggest "that the response of the pulp to amputation is dependent on sensory receptors." The amputations were done under what the authors describe as "light ether anesthesia." There is no indication of the use of any type of pain-relieving substance at any time following the amputations or for the severe ulceration. The paper states, "The rats with incisors amputated most frequently exhibited the greatest retardation in rate of total growth." Some of the rats underwent a series of eight amputations at 2-day intervals (American Journal of Physiology, July 1960).

AUTOMATION IN EXPERIMENTS WHICH CAUSE PAIN AND FEAR

One of the most serious problems relating to the infliction of suffering on animals in laboratories is a massive increase in the numbers of animals used, together with a growth of callousness and acceptance of experimental methods that cause great distress to animals but involve a minimum of personal exertion because they are mechanized.

A clear illustration may be found by comparing with later developments the protests written in 1949 by experimental biologists and published in the August 6 issue of the Lancet. The protests were leveled against experiments which they felt to be unusually cruel. But since 1949 experiments of the type described have changed from occasional to mass produced. Dr. F. Golla spoke of the dishonor cast on medical research by a study entitled "Effects of Chronic Fear on the Gastric Secretion of HCL in Dogs," in which intermittent electric shocks were applied to seven dogs over a period of 6 months.

In 1959, apparatus of this type has been perfected for mass use and was announced (January 1960) in the newsletter of a commercial breeder of laboratory animals in the following terms: "A new electromechanical apparatus for stressing small animals has been developed. It consists of a grid-floored plastic cage system, divided into cubicles, which makes it suitable for large numbers of small animals instead of the usual one or two. The cubicles are restricted in height in order to discourage rats, if these are the occupants, from standing erect and deliberately placing their hind feet on bars of identical polarity. No water or food receptacles are provided in the system since these make it possible for the animals to avoid contact with the floor * * * some of them are apt to bite the rods which they can easily recognize as the source of their discomfort. This, in turn, may cause convulsions and spinal fractures. Either acute or chronic stress may be produced by adjusting the intensity and duration of the shock * * *." (Carworth Quarterly Letter, No. 56, reprinted from the Journal of Applied Physiology, 14(5): 869, 1959).

Also described is an improved restraint-technique for producing stress and cardiac necrosis. The report states: "Although the rats bite their paws in trying to free themselves, this drawback may be overcome by either cutting the animals' incisors or by adding a special collar to the board. * * * Using this apparatus and technique typical enlargement of the adrenals, thymicolymphatic involution and gastric ulcers are produced in a few hours, reactions which become very marked in 24 hours * * *" (ibid).

In another Lancet letter, six signatories invited scientific readers to "assert with us that treatments of the kind to which we have referred at the beginning of this letter are to be condemned as shocking to a normal human conscience." These treatments include the tumbling of animals in a Noble-Collip drum. Since 1949, the use of the drum in the United States has spread widely.

The word "drumming" has become an accepted verb. For example, the March 1960 issue of the American Journal of Physiology, stated: "Rats were drummed according to standard procedure in the Noble-Collip drum, males receiving 600 revolutions and females 650." Another established term is "drum trauma" as, for example: "The fact that this drug predisposes rats to the lethal effects of

drum trauma * * *" (ibid). Injuries caused by drumming are referred to as follows: "In the last experiment only those animals surviving for 80 minutes after drumming (and therefore in a true state of shock) were used, all deaths from frank internal injury having been excluded."

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Senator NEUBERGER. I thank the Congressman for giving me this time.

Mr. ROBERTS. Thank you, Senator.

It is always a pleasure to have you before our subcommittee. We have worked with you many, many times, and you have been of great benefit and help to us. Thank you very much for your appearance.

Next, we are again honored by a very distinguished and charming lady, the Congresswoman from Michigan, the Honorable Martha W. Griffiths. Your bill, H.R. 1937, is very important and I know you are anxious to speak on the merits of this proposed legislation. We are pleased to have your statement, Mrs. Griffiths.

STATEMENT OF HON. MARTHA W. GRIFFITHS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mrs. GRIFFITHS. Thank you, Mr. Chairman, for the opportunity to speak in behalf of my bill, H.R. 1937.

The purpose of this legislation is to insure that animals used in institutions wholly or partly supported by taxpayers' money are not experimented upon by incompetent persons or in cruel ways and that they do not suffer through neglect, abuse, or excessively close confinement.

The bill is modeled upon the British act of 1876 and it is not intended in any way to impede or limit genuine scientific research involving experimentation upon living creatures. It is designed simply to prevent wanton, needless, or sadistic torture of animals; it calls for elementary decency in the treatment of animals before experimentation; and it calls for care consistent with the experiment in putting them out of their misery when the experiment is over.

The main feature of this bill provides that each scientist who uses animals for experimental purposes is individually licensed and responsible for the animals he uses. If the scientist failed to meet the requirements, his license could be revoked or suspended. Each laboratory where animals are used would also be registered.

The scientist would submit his plan for an experiment or series of experiments to the Secretary of Health, Education, and Welfare. Unless disapproved at once by the Secretary, the licensee would be free to proceed with his work. Contrary to the assertions made by opponents of the measure, there is no requirement for prior approval, therefore the fear of unending delay in proceeding with research is groundless.

Well-qualified inspectors would have access to laboratories and records and make unannounced inspections. These inspectors would be under the jurisdiction of the Secretary of HEW, and would be selected not only for their medical competence but also for their high moral integrity. In this area we might be able to benefit from British experience which has performed a commendable service in selecting inspectors with outstanding qualifications.

A groundless fear of opponents to this legislation is that there would be an excessive amount of detailed paperwork.

This bill would not require any more paperwork than one would expect in any competent and thorough research project or experiment. Some object to the keeping of records. What is the point of performing experiments if no records are kept of them. These records should be adequate enough to allow the inspectors to enforce the law required. They would include (*a*) a submission of the plan of work showing that it has genuine scientific need to be done and has been planned as humanely as possible, (*b*) identification of animals used and their disposition, and (*c*) a brief annual report.

The purpose of the pain conditions is to prevent animals from dying slowly in agony and to limit, as far as possible, lesser suffering. Minimum standards of care and comfortable housing are required.

In short, under the provisions of H.R. 1937, animals' suffering is limited, but it is not prohibited, for scientists do not yet know how to conduct the vast variety of biological research without some suffering. But this measure prohibits suffering that is both severe and prolonged.

By raising standards in the care and treatment of animals it would improve medical and biological research wherever standards are now too low.

Some say that this act would stop medical research. On the contrary, under the British act some of the greatest medical discoveries of all time have been made; for example, penicillin.

No less than 11 British scientists have received the Nobel Prize for biology and medicine. Prof. P. B. Medawar was so honored in 1960.

Scientists can have no quarrel with this bill. It is indisputable that important strides in medicine have been achieved through experiments on living animals. Humanity has been enriched by such research and must continue it. But the callous or careless infliction of pain is a debasement of humanity.

H.R. 1937, by providing humane standards in the treatment of animals used for experiments in laboratories supported in whole or part by Federal funds, would put an end to inexcusable suffering. By providing the means of enforcing those standards through the licensing of experimenters and the requirement of minimum recordkeeping, it would also do much to improve the quality of research.

Mr. ROBERTS. Thank you for your enlightening and excellent statement, Mrs. Griffiths. We have been honored by your presence here this morning, and hope you will return soon to assist us with future legislation before this committee.

Mrs. GRIFFITHS. The pleasure was mine, Mr. Chairman.

Mr. ROBERTS. Our next witness is the Honorable Morgan M. Moulder, who has served on this committee for many years and has been interested in this type of legislation for a long time, as well as many other pieces of legislation which have been highly beneficial to the country.

It is with a great deal of regret that I learn that he did not seek reelection this time. We have served, as you probably noticed, side by side on this committee for many, many years, and we have always had, you might say, almost similar views on legislation, and I am sure that I speak the sentiments of all the members of the committee when I say we are certainly going to miss you next session, Mr. Moulder.

Mr. MOULDER. Thank you, Congressman.

Mr. ROBERTS. I know wherever you go and whatever you do, you will be just as successful as you have been here.

STATEMENT OF HON. MORGAN M. MOULDER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. MOULDER. Thank you, Mr. Chairman.

I am, as you know, the author of H.R. 3556, one of the bills that you are today considering. I introduced this bill in the House on January 30, 1961, and in the intervening time I have become constantly more firmly convinced that it is desirable and necessary legislation.

The fundamental purpose of my bill is to provide for humane treatment of animals used in experiment and research by recipients of financial grants from the United States and by agencies of the U.S. Government.

There is a moral imperative behind this purpose. I am sure that the entire American people agree that cruelty, whether to other human beings or to animals, is immoral. To cause or to permit pain that can be prevented or avoided is morally wrong. There is no doubt in my mind that the American people, including all of our scientists, agree on this premise.

We of the Congress recognized and acted on this same issue when, in 1958, we enacted into law the Federal "humane slaughter" law, which quickly brought about a beneficient reform of methods of killing livestock in our packing plants. The law of the United States and of the several States and political subdivisions of the Nation contains many other precedents that reveal the agreement of our people that cruelty is immoral and should and must be prevented, when necessary, by law.

I doubt that there can be found anyone who will soberly oppose the idea that animals used in medical research and in the production of pharmaceuticals—and I quote now from my bill—

> shall be spared avoidable pain, stress, discomfort, and fear, that they shall be used only when no other feasible and satisfactory method can be used to obtain necessary scientific information for the cure of disease, alleviation of suffering, prolongation of life, or for military requirements, that the number of animals used for these purposes shall be reduced as far as possible, and that all animals so used shall be comfortably housed, well fed, and humanely treated.

I have never met a scientist, or anyone else, who did not agree that these are desirable and morally imperative objectives.

H.R. 3556, in my opinion, is practical and sensible legislation that would achieve the fundamental purpose that I have defined. The bill should be enacted into law even if it had no other purpose of merit.

But this bill would have further effects that would be directly beneficial to our people as well as to the animals that we use in medical

research and in industry. I summarize these additional benefits as follows:

1. H.R. 3556 would save money for taxpayers.
2. The bill would improve the quality of such medical research.

And either of these results would justify enactment of the proposed law.

Mr. Chairman, with your permission I wish now to offer substantiation and proof of some of the statements that I have made about the merits of this bill, but, before I do so, I think that I should make a few remarks of general nature that will contribute, I hope, to a rational and friendly discussion and understanding of H.R. 3556 and of Mrs. Griffiths' bill, H.R. 1937, by both proponents and opponents of this kind of legislation. Because I do believe that both scientists and humanitarians—I probably would be more accurate if I said scientists and other humanitarians—are agreed about the desirability of eliminating preventable suffering, I think that it ought to be possible to achieve in this hearing an atmosphere of cooperative effort to reach a goal desired by all.

Mrs. Griffiths will speak for herself. For my own self, I assure you that I would not sponsor any bill that would impede beneficial medical research. I have heard and read statements that my bill would tie scientists up in redtape, that in some way it would hinder the work of combatting disease. Were that true, I would withdraw my bill. But I have studied this bill very carefully—up to this point probably more carefully than anyone else in the Congress—and I so far see no justification at all for any contention that the effect of this proposed law would be antiscience or would be in any way burdensome to conscientious research workers. I think that it ought to be noted that all of the so-called antivivisection organizations of the United States have registered violent opposition to my bill. They oppose the bill because it would not interfere with any necessary use of animals in research.

So I hope that your committee and the Congress, Mr. Chairman, will not permit a confusion of the issues before you. Whether animals are to be used in research is not at issue. My bill contemplates that animals will be used in research of all kinds. The issue before you is solely whether, when animals are used, their suffering shall be reduced to the minimum possible.

It may be useful for me to call your attention to some of the technical features of H.R. 3556.

First of all, it should be noted that this bill actually is not addressed to scientists or others who use animals in research. Instead, the bill is simply a proposal that the Congress impose certain controls over gifts of Federal funds, and expenditure of Federal funds. The bill is addressed to Federal agencies that make grants for medical research and that spend money in such research or in allied fields.

H.R. 3556 would have absolutely no effect on any individual worker or institution that is not using Federal funds. The effect would be very widely inclusive, of course, because we are this year spending and giving away more than $1 billion of Federal money on medical research, but my bill would not affect any scientist or laboratory that did not voluntarily seek public money.

It seems to me to be eminently reasonable that the Congress should impose conditions on grants of the taxpayers' money. We do the

same thing in many other circumstances and, indeed, we have an obligation to do so in this case.

Now, what are the conditions that I propose, in this bill, to attach to gifts of public money? They are, really, few and simple. Shorn of the verbiage that is unavoidable in the framing of a law of this kind, this is the essence of H.R. 3556:

(1) It would establish an Agency for Laboratory Animal Control, under a Commissioner. I have not specified the exact location of this Agency in my bill, thinking that this is a minor matter for determination by the Congress or by the executive branch, but my own opinion is that the Agency should be a unit of the Department of Justice.

(2) It would lay down certain definitions of humane care and treatment of animals, all practical. The definitions of humane treatment in my bill are, in fact, almost identical with standards prescribed by our leading scientific organizations in this country.

(3) It would require agencies and instrumentalities of the United States that use animals in research and allied pursuits to live up to the prescribed humane standards.

(4) The bill would forbid agencies of the Government to grant Federal funds to individuals and institutions that do not live up to the prescribed humane standards.

(5) It would authorize and require the Commisioner of the Agency for Laboratory Animal Control to enforce the act.

And that, in brief, is the whole substance of H.R. 3556. Other language of the bill is concerned merely with the machinery of ordering and enforcing those substantive points.

I expect that it will be argued today, because I already have heard and considered such arguments, that it would be impractical and burdensome to require, as H.R. 3556 would, that scientists and laboratories submit research project plans to the Commissioner of Laboratory Animal Control before receiving grants of Federal funds, or to make reports later of the details of how the Federal money was used. I think that this is an argument without merit. Moreover, I think that this is a really scandalous contention.

It seems to be implied, by those who so argue, that the Federal Government and the American people have no right to know, before a grant of taxpayers' money is made, what is to be done with the enemy. And it seems to be implied that the Government and the people have no right to know, when the money has been spent, how it actually was used. That is an arrogant position, indefensible. I think that we need a lot more control than we have had over use of the vast sums of money that we are every year giving to the laboratories and the researchers, and I think it is high time that we do this job. Indeed, it is exactly here that, I think, H.R. 3556 would begin to operate to save money and to improve medical research.

Mr. Chairman, I recall to you that this year the House of Representatives has voted to allow the National Institutes of Health to spend and to give away $840,800,000 for medical research. We have, in addition, authorized other departments of Government to spend many more million of dollars—well over a billion dollars in total—for the same purpose.

In this connection it is interesting to note that the American Medical Association says that it is "probable" that we are spending "huge sums

of money" on "doubtful, artificially blown up, occasionally ridiculous projects." I do not always agree with the American Medical Association but about this subject I think that the association is right.

Our own House Committee on Governmental Operations has said, with emphasis, that we need new and better controls of the projects and grants of the National Institutes of Health.

And I want to quote Mr. John M. Russell, president of the respected Markle Foundation, one of the pioneer organizations in private financing of medical research. In his 1960 annual report, the president of the Markle Foundation said that many experts on current medical research consider much of the current outpouring of research reports "worthless, or at least of questionable value."

How can this be true—

Mr. Russell continued—

in a world so intensely interested in the eradication of disease and the advancement of medical knowledge? It is the very intensity of this interest, the unrelenting pressure put on our scientists to produce, that has overstimulated medical research, that has encouraged work on marginal projects, that has supported men of doubtful ability and has given a boost to the status seekers in medical science.

In other words, much of the work that is being done and the papers that are being published are done and published for the wrong reasons: because someone had too much money to spend; or because a Government official had to dispose of all the appropriated funds within the fiscal year for which it was appropriated; or because someone forced someone else to work in an area not of his own choosing; or because someone found it easier to drift along on fellowships than to strike off on his own; or because a practitioner thought it would "look good" if he did some research; or because an assistant professor needed "to publish" to get a promotion; or because of a thousand other reasons irrelevant to the advancement of medical knowledge.

Shoddy reasons for doing research tend to produce shoddy research.

And this cry of dismay and disillusionment, mark you, is from the resopnsible, respected head of a foundation that for years has been financing medical research. It is a disturbing indictment of our own stewardship, in the Congress, of public funds.

No, I do not for an instant accept the argument that medical research will be impeded if, before throwing out the taxpayers' largess, we demand more detailed research project plans than we have required in the past or if we require those who have used the public funds to tell us, later, how the mony was used. Frankly, I look with suspicion on any who call such requirements "redtape." I think that it is pretty evident that the so-called redtape requirement of H.R. 3556 would pince only those whom the president of the Markle Foundation described as those who are "doing shoddy research for shoddy reasons."

The net result of the tightened controls of H.R. 3556, I am convinced, would be more and better research for every dollar spent. Translated, that means that we would get along faster toward a cure for cancer, polio, cerebral palsy, heart disease, mental ill health, and the other goals that our medical research is supposed to reach, and that which the people are interested in and want to be achieved.

You also, I expect, will hear it argued in this hearing that the medical laboratories using animals should be allowed to police themselves. Enactment of the proposed legislation will be opposed by statements that scientists are humane, that various professional associations are moving to prevent cruelty, and that legislation, therefore, is unnecessary.

I will be the first to grant and to proclaim that the great majority of scientists—and particularly those of the biological sciences—are kindly, humane men and women. But that fact constitutes no valid argument against a need for this legislation.

More than 200,000 persons, by a very conservative calculation, are engaged directly in the use and handling of animals in research, teaching, and the production of pharmaceuticals. Commonsense tells us that in any such group there are people of many kinds—humane, kind, lazy, conscientious, careless, cruel. Not everyone who handles animals in a laboratory is a scientist. There are kennel men, janitors, technicians—and they far outnumber the scientists. Even among the scientists there are many shades of opinion about their responsibility to the animals they use.

History and modern experience tell us that the conditions that H.R. 3556 is designed to correct cannot be controlled by voluntary action. One might as well propose that all anticruelty laws be abolished, on the ground that everyone will then spontaneously and voluntarily emulate St. Francis.

No doubt you will hear other objections to my bill. This is an important piece of legislation and it is right that it should be carefully examined and natural that it should be greeted skeptically. It is proper that the scientific community and the public should wish to be sure that nothing shall be done to inhibit the work of anyone who can expand our knowledge of the universe and apply our knowledge to our needs. I share that concern with everyone else.

But I offer and recommend this bill to you with earnest personal conviction that it is desirable as a matter of public morality, that it will improve medical research, and that it will save public funds that now are being wasted.

Mr. Chairman, as you stated, of course, this is my last year in the U.S. Congress. If I were here next year, when I think some action most certainly should be taken on this bill, I have made the statement that on page 8 of the bill beginning with lines 1, 2, and 3, I would move to amend the bill by striking out lines 1, 2, and 3 on page 8.

Thank you, Mr. Chairman. That completes my statement.

Mr. ROBERTS. The Chair would like to thank the gentleman from Missouri for his interest in this matter and for what I consider to be an excellent statement of this bill, its purposes, and I certainly want to compliment the gentleman on his appearance before the committee.

In one part of the statement where the gentleman points out that we are spending, according to the figures you give, for this fiscal year $840,000 for medical research, and the gentleman raises some very serious questions whether or not there has been in some instances ridiculous projects, perhaps an overstimulation of some types of medical research, and I am glad the gentleman pointed up these matters because the chairman of this committee and the members of this subcommittee will go into this matter thoroughly following the convening of the new Congress, provided the chairman returns. I am grateful to the gentleman for a very fine statement.

I do not believe that, had the gentleman made a long and serious effort to close out his congressional career in some fine manner, that he could have done it any better than appearing here today in behalf of this legislation.

I have no questions.

Gentlemen of the committee?

Mr. NELSEN. I have no questions except to compliment our colleague for his fine statement and his fine work in this regard, and I wish him well in his future work, whatever it may be.

And, who knows, he may be back.

Mr. ROBERTS. Let us hope so.

The gentleman from Pennsylvania?

Mr. RHODES of Pennsylvania. Mr. Chairman, I want to commend our colleague, the distinguished gentleman from Missouri, Mr. Moulder, for his authorship of this legislation and the leadership that he has given.

I think it is meritorious legislation, and it should be enacted.

Both Mr. Moulder and the Congresswoman from Michigan, Mrs. Griffiths, have given a great deal of time and study to this question, and I think all of us are indebted to them for the work they have done in bringing this matter before the Congress and also bringing it to public attention. It is too late in this session for favorable action before adjournment, but the progress that has been made, thanks to the gentleman from Missouri and the lady from Michigan, it seems to me that there is a good chance that it will get favorable action in the next Congress.

I know all of the members of our committe, of which Mr. Moulder is a member, regret that he is going to end his congressional career. It is going to be a real loss to his district, and, I know, to the people of the country who are interested in the type of legislation the gentleman from Missouri has given his attention to.

Mr. MOULDER. Thank you, Mr. Rhodes.

I want to express my apprecaition and pride in hearing the remarks that all of you have made concerning my services here on the committee and in the Congress.

It was my thought that even though it was too late to secure any favorable action on the reporting of the bill at this session of the Congress, that it would stimulate interest in the legislation and encourage early action at the next Congress and a better understanding of the proposed legislation.

That was the important matter to be achieved.

Mr. ROBERTS. I might say, too, to the gentleman that, as he well knows, there has been no piece of legislation before our committee this year that has received the interest from people throughout the country that this particular legislation has received.

I know that it has been very hard for the staff to answer the mail on these bills.

As the gentleman knows—and I say it not in defense of the full committee, but simply as a matter of explanation—we have had many serious questions before the committee this year; there have been many primaries throughout the country; and we have, I think, passed some very wonderful legislation.

In fact, I think it has been a real banner year for this committee.

That is one of the reasons we have not been able to take up these bills.

Again, I thank the gentleman.

Mr. MOULDER. Thank you, Mr. Chairman.

Mr. Chairman, may I ask the committee at this time to hear and may I present the next witness?

The next witness I would like to present, it is an honor to present Dr. Miller, who is chairman of the Biology Department of Stephen F. Austin College in Texas.

Dr. Miller was in Washington in 1961 and 1962 as a special consultant to the United States Office of Education on the teaching of biology.

He has traveled a long way to appear before the committee this morning.

And also Dr. James T. Mehorter. Dr. Mehorter is dean of students of Berkshire Community College in Pittsfield, Mass., and he is a clinical psychologist and formerly a professor of the school of education at the University of Vermont and also a lecturer at the school of medicine at the University of Vermont.

He, too, has traveled a long distance, and it is my honor to present both of these distinguished men to the committee.

Mr. ROBERTS. Will they make a joint appearance, may I inquire?

Mr. MOULDER. I think they want to appear separately, Mr. Chairman.

Mr. ROBERTS. Then I guess Texas is a little bit farther away, so we will take Dr. Miller first.

Dr. Miller, it is a pleasure to welcome you back to Washington. We will be glad to have your statement at this time.

STATEMENT OF DR. E. L. MILLER, CHAIRMAN OF THE DEPARTMENT OF BIOLOGY, STEPHEN F. AUSTIN COLLEGE

Dr. MILLER. Thank you, Mr. Chairman.

I have read the bill, read it at some length a year ago and looked it over again this morning.

At the time I read it, I realized that our country very badly needs something of this sort. I believe that sadism is something that can grow through sadistic influences to which young people are exposed, and I think that all of us agree that we need something to combat some of the influences in our country that are making sadists out of a good many of our young people as witnessed by our gangs and such.

It seems to me that it is time for our Government to set some kind of a standard that will serve as a guide to those interested in humane care of animals, and also those who work with animals in experimental work.

I think a bill of this type would do this.

There are certain provisions about it that I think might be modified to make it more functional for scientific laboratories, but that does not change the fact that I believe a good many scientists like myself feel that it is time for any civilized country such as ours to adopt something that the Government can set up as standards for laboratory use of animals.

Decent care, painless death, experimental work with higher animals by responsible people, it seems to me, are the three fine things about the bill which it would guarantee. I am a little confused by the use of the word "animal" and the specifications for care, because I think they pertain a little too much to mammals, and, after all, if we are

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going to talk about vertebrates, we have to be as concerned with other vertebrates too.

So it seems to me that there are things in it that need modifying and amplifying, but I do not see how biologists can deny that there needs to be something that would guarantee the kind of care and treatment of animals that our country has really needed long ago.

Mr. ROBERTS. Thank you, Dr. Miller.

I appreciate your contribution and your coming from a long distance to be with us here today.

We are always glad to have Texans before this committee. You know, this committee furnished the Speaker of the House of Representatives, the late and beloved Congressman Rayburn, who was chairman of this committee at one time, and we have two wonderful Texans on the committee now: the gentleman from Texas, Mr. Rogers, and also Mr. Kilgore. So Texas is well represented on our committee, and we are delighted to have you here today.

Dr. MILLER. Thank you.

Mr. ROBERTS. Any questions?

Thank you very much.

Our next witness will be Dr. James T. Mehorter, dean of students, Berkshire Community College, Pittsfield, Mass.

May I also say, Dr. Mehorter, we extend a warm welcome to you.

Massachusetts is also well represented on our committee by Mr. Macdonald and Mr. Keith, who serve on the full committee, and I am sure they will appreciate your appearance. We are delighted to have you.

STATEMENT OF DR. JAMES T. MEHORTER, DEAN OF STUDENTS, BERKSHIRE COMMUNITY COLLEGE, PITTSFIELD, MASS.

Dr. MEHORTER. Thank you, Mr. Chairman.

I have abandoned my students and my college today and flown down here from Massachusetts because I feel strongly, after some years of experience and thought about the subject before you, that Congress should act decisively against cruelty that now is much too frequently perpetrated against animals in the name of science.

As you have been told, my training and experience has been in the field of educational psychology with specialization in the discipline of mental hygiene.

Research in psychology has produced some of the most revolting and least defensible cruelties to animals, and I feel a strong moral duty to speak against these things and to urge you to act on H.R. 3556.

A few years ago, the late Dr. Robert Gesell, father of Mrs. Stevens, who is appearing before you today in further support of action to protect laboratory animals, and who was then the highly respected and even revered chairman of the Department of Physiology of the University of Michigan, said to a meeting of the American Physiological Society, and I quote him verbatim:

> The National Society for Medical Research would have us believe that there is an important issue in vivisection versus antivivisection. To a physiologist there can be no issue on vivisection per se. The real and urgent issue is humanity versus inhumanity in the use of experimental animals. But the NSMR attaches a stigma of antivivisection to any semblance of humanity.

Antivivisection is their indispensable bogey which must be kept before the public at any cost. It is their only avenue toward unlimited procurement of animals for unlimited and uncontrolled experimentation.

I shall continue with the quote:

The NSMR has had but one idea since its organization; namely, to provide an inexhaustible number of animals to an ever-growing crowd of career scientists with but little biological background and scant interest in the future of man. Consider what we are doing in the name of science and the issue will be clear. We are drowning and suffocating unanesthetized animals in the name of science. We are determining the amount of abuse that life will endure in unanesthetized animals in the name of science. We are producing frustration ulcers in experimental animals under shocking conditions in the name of science. We are observing animals for weeks, months, and even years under infamous conditions in the name of science.

Well, I have some special knowledge of the kind of work to which Dr. Gesell referred when he said:

We are producing frustration ulcers in experimental animals under shocking conditions.

This is a specialty field of my colleagues in the science of psychology. Our scientific literature abounds with detailed reports of such things. Dr. Gesell was restrained behind his phrase, "shocking conditions." There are thousands of experiments, sometimes mere demonstrations, that cause intense and prolonged suffering to animals, and in many institutions the experimental animals are kept in terrible physical conditions and are given only the minimum of care necessary to keep them alive for use.

In studies of the brain, the central nervous system and the reactions of organisms to various stimuli, animals of almost every vertebrate species are frequently submitted to deliberately induced pain and the intense assaults on instinct and basic needs that Dr. Gesell spoke of as frustration.

In recent years we have had an increasing number of experiments that involve so-called decerebration of animals, which means that a part of the brain is surgically removed or destroyed so that pain stimuli can be administered without anesthesia. There is considerable scientific argument about the nature of pain perception, and there is vigorous debate about pain experienced by decerebrated cats, monkeys, and dogs.

But animals so altered—"prepared" is the jargon word that is used most frequently in the literature—and then fully conscious, I am of the opinion that they suffer to a seldom admitted degree. Such things, I think, should be brought under control by law.

The Moulder bill would be justified and should become law if only because it would compel institutions that use animals to provide humane housing and humane care for the animals that they use.

Laboratories keep animals under conditions that can only be described as Dr. Gesell described them—shocking. Animals of all species are jammed into cages too small for them and into rooms too small and unsuited for the number of animals kept. It is easy to find laboratories with gleaming, expensive, modern equipment, quite often paid for by the Federal Government, next door to dismal, damp, dark animal quarters, equipped with rusting and odorous cages.

This kind of thing results from the fact that there is a price tag on kindness, and many researchers and university business managers are unwilling to carry kindness to the point at which it costs money.

Too many laboratories hire uneducated, unambitious, unfit men to handle and care for their animals. Wages commonly offered for that kind of work are too low to attract true technicians into that line of work.

Very few American laboratories, even among the large universities, provide any professional veterinary care for animals.

These kinds of facts I give you gentlemen from my own background as a student and subsequently as a university and college teacher and administrator.

There is a need for the action proposed by the Moulder bill. I expect that there will be some who will tell you that you must beware of interfering with science, of impeding medical research. By implication, if not directly, there probably will be an attempt to equate the Moulder bill with attempt by antivivisectionists to forbid entirely the use of animals in research.

That kind of argument against the Moulder bill is nonsense, a kind of nonsense that is particularly unbecoming in men and organizations that claim to follow scientific modes of thought.

The Moulder bill will not interfere to the slightest degree with legitimate research of any kind. It might get in the way of some of the boondogglers who are to be found in laboratories just about in the same proportion as elsewhere.

Research would be improved and money now wasted could go to better work.

But there is not a single phrase in the Moulder bill that would hurt any honest research worker or impede his work. I certainly would not have appeared before this honorable committee this morning if I felt that I would be supporting the antivivisectionist platform, for I am an enthusiastic supporter of humane medical research. It is a feeble argument, indeed, to assert that great medical and humane advances have not been made by medical research. Surely, they have.

In conclusion, then, I would like to offer you a thought that comes from my own specialty in psychology; that is, mental hygiene. This is a field of behavioral science that is often misunderstood or simply not understood.

I do not intend to afflict you with a discussion of my chief professional interests. I trust that you gentlemen of the committee understand that when a psychologist speaks of mental hygiene, he refers to an aspect of health, of public health as well as private health.

The point that I really finally wish to make is that our entire Nation is harmed, as surely harmed as it is by radioactive fallout or by indiscriminate use of poisonous insecticides, by cruelty that has the appearance of social sanction and legal blessing.

It is important in this era when violence and primitive brutalism are a threat to our entire species and even to the physical existence of the earth that we cultivate and encourage and nourish in every possible way the qualities of empathy and compassion and love that are the essence of mental health.

Neither our Nation nor our race can afford cruelty, whether cruelty of deliberate, willful nature or cruelty of neglect, carelessness, and indifference.

I believe that the Congress can more surely guide our Nation toward safety and happiness by moving in the direction of compassion and

empathy with other living creatures than by anything that it can do of a military nature.

Mr. ROBERTS. Thank you very much for your statement. We appreciate your appearance.

Any questions?

I promised I would call the president of the National Catholic Society of Animal Welfare in time so that he can make a plane schedule, so if the Right Reverend Monsignor will come around, we will be glad to hear from him.

STATEMENT OF THE RIGHT REVEREND MONSIGNOR LeROY E. McWILLIAMS, PRESIDENT OF THE NATIONAL CATHOLIC SOCIETY FOR ANIMAL WELFARE

Monsignor MCWILLIAMS. Mr. Chairman and members of the committee, I am here today to defend the defenseless and to raise my voice on behalf of animals to bring out that in our dealings with them, morals are very definitely involved.

The first book of the Bible tells us God created the animals and the birds. And so they have the same Father as we do. In other words, God's Fatherhood extends also to our "lesser brethren." In their own way they bear witness to God and give glory to Him. They are a perpetual reminder of the wisdom, power, and providence of God, to be approached and used with friendliness and understanding.

Pope Pius XII of happy memory, in 1950 in a remarkable statement said:

> The animal world, as all creation, is a manifestation of God's power, His wisdom, and His goodness and as such deserves man's respect and consideration. Any reckless desire to kill off animals, all unnecessary harshness and callous cruelty toward them, are to be condemned.

Pope Pius X said:

> Many of the great saints were conspicuous for their gentleness and kindness toward animals and the spirit of the church has always shown itself strongly in that sense.

To these outstanding names can be added many other Popes, cardinals and princes of the church who continually point out that we must care for animals and spare them unnecessary suffering.

Archbishop Ryan, formerly of Philadelphia, and Cardinal Gibbons of Baltimore are among those to whom I refer.

Going back to first principles, all animals belong to God. He alone is their absolute owner. He has lent them only to us to be used as He himself would use them. In a word, in our relations with them we must imitate the divine attributes, the highest of which is mercy.

Our dominion, then, over animals is limited and the limit is their own living and sensitive nature. We cannot do with them what we will. In sharing God's dominion we have responsibilities as well as privileges. That is why St. Thomas, the great doctor and theologian, warns about the proper use of animals lest they appear at the final judgment to testify against us. That is why in "Dives et Pauper" ("The Rich Man and the Poor Man"), a treatise written in the 15th century on the Ten Commandments, it is stated:

> For God that made all, hath care of all, and He will take vengeance on all that misuse His creatures.

The English bishop, James Bellord, in his "New Catechism of Christian Doctrine" writes as follows:

Always be kind to dumb animals. They are useful to us and very faithful and they deserve good treatment. They have very little of the pleasures of life, and we should not take away the little they have. We are like God to them: so we should act like God, doing good and not evil to the poor animals.

Archbishop Luis Martinez, in speaking of animals, remarked:

Creatures are ours to handle as we would touch the strings of a lyre, to intone a melodius song to God. That is the way they were used in Paradise. Man was king of creation: he could dispose of everything on earth. Adam before his sin had a profound sense of order and he used creatures as a stairway to lead him to God.

Msgr. Ronald Knox in an unpublished meditation once said:

We were all fellow passengers long ago in Noah's ark and we can never be strangers to one another after that cruise.

Before we say anything else, we must remember that they are meant to be here, and they have undergone a heavenly scrutiny and have been declared very good. (Gen. 1: 20, 21)

St. Bernard tells us that Christ was put in the crib between the ass and the ox that He might preserve men and beasts.

That gifted writer, Leon Bloy, said:

And precisely because animals are the most misunderstood and the most oppressed by man, I think that some day God will do by them something beyond our imagination, when the day comes to manifest His glory.

Father Aloysius Roche, modern author and publicist, wrote:

We must try to decipher in animals the signature of the Creator.

And the same author on another occasion in his book "These Animals of Ours" wrote as follows:

We must take our stand in front of these animals of ours, first and foremost in an attiude of respect and understandind—we must approach them with the reverence of St. Francis, who looked at them with attention, with patience, with sympathy, in short, with the eyes of a brother. The church by setting the seal of approval on his life surely implies that his behavior to the lower animals, is part and parcel of the Franciscan message to the world.

Father Keating, a distinguished member of the English Society of Jesus, in his pamphlet "Kindness to Animals" writes:

Like man they are created for happiness after their sort and according to their capacity, and we are bound to do nothing deliberately to impede their destiny.

Msgr. F. Davis in a sermon at St. Chad's Cathedral in Birmingham said:

Clearly man ruling this world in place of God must respect the nature that God has given to animals. He must not abuse these gifts by doing wanton violence to their nature and causing them unnecessary suffering and hardship. Some sufferings belong to the life of both animals and man, but nothing can justify the infliction of needless sufferings on animals by man.

The foregoing I have set down to show that God is the Father and Creator of the animals as much as He is our Father and Creator.

He is their absolute owner and Master. He loves them tenderly and dearly. He lends them to us and adjures us in our use of them to do as He himself would do.

As we look around us and observe the recklessness and abandonment, the callousness and cruelty that is the general lot of animals

today, we feel that we have lost our perspective in regard to these poor helpless creatures.

The laboratories must bear their fair share of this indictment for many of the experiments they do are not necessary or useful, exceed the bounds of licitness, and degenerate into mere torturing of animals. I know whereof I speak for I have read many of the accounts written by the experimenters themselves.

When the Federal hearings were held a few years ago on humane slaughtering, one woman remarked that if our present slaughterhouses had glass walls, we would have humane slaughter the next day all over the land.

In a similar vein I venture to say that if Mr. and Mrs. Q. Public knew what is being done today in many laboratories, such an avalanche of shocked and public opinion would arise as to make the continuance of such things impossible. No, God should not be mocked.

A great reform is needed, a betterment, an improvement so that this holocaust of millions of animals in laboratories will no longer be. Certainly such misuse of God's creatures is bringing us no blessings but may be the cause of much of our woes. We would do well to remember what Dr. Henry J. Bigelow, late professor of surgery at Harvard Medical School, once said:

> There will come a time when the world will look back to modern vivisection in the name of science as they do now to burning at the stake in the name of religion.

Mr. ROBERTS. Thank you, Monsignor.

You certainly deserve the thanks of this subcommittee for a wonderful statement which shows you have done a lot of research and we feel complimented that you would appear here and give us the benefit of your evidently long study of this question.

We appreciate it very much.

Monsignor MCWILLIAMS. Thank you.

Mr. ROBERTS. Any questions, gentlemen?

Thank you, sir.

Monsignor MCWILLIAMS. We are in favor of the Moulder bill as amended.

Mr. ROBERTS. Thank you, sir.

Dr. Paul Kiernan of the Washington Clinic?

Dr. Kiernan, it is a pleasure to welcome you to our subcommittee.

I might say that I have used your clinic, my children have been patients of yours. I do not know if you know that or not, but it is certainly a psleasure to hear from you today.

You may proceed with your statement.

STATEMENT OF PAUL C. KIERNAN, M.D., WASHINGTON CLINIC, WASHINGTON, D.C.

Dr. KIERNAN. Thank you.

Mr. Chairman and members of the committee: I am pleased to appear as a witness in favor of the proposed bill, H.R. 1937. I appear as an individual representing no group. My practice is surgery, as consultant in surgery, at the Washington Clinic, Washington, D.C., and associate professor of surgery, Georgetown University Medical School.

Animal experimentation has done much and will do more to help in the advance of medicine and surgery in this country. I should be completely opposed to anything which would interfere with bona fide use of experimental animals by competent personnel.

I have great respect for and love of dogs. For all that experimental animals do in their own way to help in medicine and surgery they should be treated and cared for in as an humane way as possible. Mrs. Griffiths' bill would provide for such.

I am well aware of the objections raised by medical research groups but am completely baffled by the reasons given for these objections. One would think the purpose of this bill were to prohibit animal experimentation and that it were sponsored by antivivisectionists. This is certainly not the case.

Is it not perfectly reasonable to provide adequate and comfortable space, food, and water for animals used in experimental work?

There should be no objection from any source to the use of anesthesia except where such use would interfere with the experiment.

Complete and accurate records are characteristic of good research and therefore would inflict no burden.

Certification for licensure of personnel is reasonable and will impose no hardship.

Mrs. Christine Stevens, of the Animal Welfare Institute, has, and is, honestly and courageously working in support of this bill. She has no hidden motives, is not interested in slowing or stifling experimental work in medicine and surgery, and is not an antivivisectionist. Her only interest is in the protection of animals against thoughtless abuse and mistreatment. For this she has been, I am sorry to say, very rudely treated by persons and groups who completely misinterpret her philosophy and goals. She should instead be vigorously applauded and thanked by everyone interested in both medicine and animals.

Mrs. Stevens' father, Dr. Gesell, was professor of physiology at the University of Michigan Medical School.

Dr. John H. Lyons was one of the great surgeons of this country, dean of Washington surgery, and president of the District of Columbia Medical Society. As fellow surgical staff members of the Washington Clinic we had many opportunities to discuss the need for and merits of this proposed legislation. He died in February of this year.

Dr. Lyons planned to appear as a witness favoring this bill. In June 1960, he wrote to our mutual friend, Mrs. Frank A. West, a member of the District Animal Allocation Board, in behalf of the then proposed Senate bill S. 3570:

> DEAR MRS. WEST: Thank you very much for your letters. As you know, I am a great lover of dogs, and want to do everything I can for them. However, I am on my vacation for a long period and I cannot make any promises as to personal appearances in the near future in regard to Senate bill S. 3570.
>
> While the use of experimental animals to advance our knowledge in medicine is right and necessary, we should and must treat the animals as humanely as possible, and I believe that the Senate bill S. 3570 is a good and reasonable bill, and I sincerely hope that it will be passed.
>
> Of course, you may use this letter in any way you wish.

Congresswoman Griffiths' bill, H.A. 1937, will not impair responsible medical and surgical research but will help make us more mind-

ful of the animals' comfort and well-being. Controls are necessary only because some of us do and may forget that animals cannot speak up for their own protection.

Even the most responsible investigator may on occasion need a reminder. This the bill H.R. 1937 will provide.

If I may, Mr. Chairman, read a letter written by Dr. Walsh, a clinical professor of obstetrics and gynecology at the Georgetown University of Medical School, who is unable to be present himself.

Mr. ROBERTS. Without objection.

Dr. KIERNAN (reading):

DEAR MRS. GRIFFITHS: I have recently had the opportunity of reading H.R. 1937 and would like you to know that I heartily endorse it in its entirety.

There is no justification whatsoever in causing undue suffering to vertebrated animals in medical and surgical teaching or research. Animals should be afforded the same opportunities for pain relief as man and should be given complete regional or general anesthesia whenever any surgical procedure is contemplated. I further agree that if any contemplated procedure will in any manner maim, disable, or result in postoperative pain, the animal would be better off if not allowed to recover from anesthesia.

Thank you, Mr. Chairman.

Mr. ROBERTS. Thank you, Dr. Kiernan.

We are grateful to you for your statement. We appreciate it for two reasons:

First of all, you have been very brief and considerate of the time of the committee; and, secondly, I think that your endorsement of this legislation would certainly cause us to give it very serious consideration.

Any questions by gentlemen of the committee?

Thank you again.

Our next witness will be Dr. Leon Bernstein, Veterans' Administration hospital, 42d Avenue and Clement Street, San Francisco, Calif.

I know that you, too, came from a long distance, Dr. Bernstein, and we are very grateful to you for coming. You may proceed with your statement.

STATEMENT OF DR. LEON BERNSTEIN, VETERANS' ADMINISTRATION HOSPITAL, SAN FRANCISCO, CALIF.

Dr. BERNSTEIN. Mr. Chairman and members of the subcommittee, I thank you for this opportunity to appear before you. I would like to make it plain that what I have to say represents my own views and not those of the U.S. Veterans' Administration.

My qualifications to appear before you today are that I am a bachelor of science in physiology and a doctor of philosophy in the faculty of science of the University of London, a member of the Royal College of Surgeons of England, and a licentiate of the Royal College of Physicians of London. I am licensed to practice medicine in the United Kingdom, though not in the United States. I am a member of both the American and the British Physiological Societies. From 1937 until 1957, except for the period of my wartime service in the Royal Air Force, I was a teacher of physiology at the London Hospital Medical College, one of the medical schools of the University of London. From November 1957 until October 1961 I was the head

of the Physiology Research Laboratory of the Veterans' Administration Hospital in Baltimore, Md.; since October 1961 I have held the corresponding appointment at the Veterans' Administration hospital in San Francisco, Calif.; and since January 1962 I have been a member of the Veterans' Administration Program Coordinating Committee for research in the basic medical sciences. I am an associate clinical professor of medicine and a consultant staff member of the Cardiovascular Research Institute of the San Francisco Medical Center of the University of California.

Since 1949, my major field of research has been the biophysics of the expansion of the lungs of mammals. Most of my work in this field has been conducted by means of experiments on living animals; and between 1938 and 1941 and again between 1946 and 1957 I was licensed under the British act of Parliament to perform such experiments, both for research and for demonstration to students.

I hope that the foregoing will indicate that I believe experiments on living animals to be necessary for both teaching and research in medicine, that I am unlikely to seek to curtail the freedom of research workers or teachers to perform these experiments, and that my support of legislation that would impose governmental regulation of vivisection is not likely to be for emotional reasons.

The scientific societies that speak officially for scientists, and also many individual scientists, argue that control or regulation of experiments on living animals is unnecessary, because the institutions of medical research and education and the scientific societies already police these activities voluntarily and adequately; and undesirable, because it will result in administrative interference with scientific freedom.

It is true that most university medical schools and many independent medical and biological research institutes, including the laboratories of governmental agencies and of drug manufacturers, have voluntarily adopted codes for the treatment of experimental animals that should:

(1) insure adequate standards of welfare; that is, housing, feeding, avoidance of infection, and so forth,

(2) prevent the performance without good cause of experiments calculated to cause pain, and

(3) minimize the pain or discomfort caused during or after surgical procedures forming part of experiments. Moreover, many scientific societies now refuse to publish in their journals papers based on research in which these principles have not been observed—a penalty that should do much to discourage careless or casual treatment or experimentation. How effective these measures have been, is however, unknown.

Moreover, it is still possible in many States for experiments involving surgical procedures to be performed on living animals, in institutions not devoted to medical or biological research or teaching, by persons inadequately qualified to do them, and for reasons that I would consider inadequate justification for them, even if they were entirely without the risk of causing pain to the subject animals. I refer specifically to experiments performed as a part of high school courses in biology, or as part of a student's submission to a "science fair" or other, similar competitive activity. As a teacher of physi-

ology to students of medicine and of science, I cannot subscribe to the belief that pupil-performed experiments on living animals, or demonstrations of such experiments performed by a teacher need be a part of high school instruction in biology, or that undergraduate instruction in universities will suffer if a background of this kind has not been provided in high school. I am inclined to suspect that little would be lost even at the undergraduate level of instruction—in which I include the instruction in the basic medical sciences given to students of medicine—if much of the student's individual experimentation on living animals were replaced by demonstrations given by an instructor. It has been my experience that most experiments performed by undergraduate students become simply an exercise in technique that, even if it were properly acquired, would have little or no value for the subsequent career of the majority of them, while from lack of adequate technique the results of these experiments are often so equivocal or misleading as to have no educational value—unless it be to demonstrate the difficulty of biological experimentation.

In spite of the voluntary activities of the scientific societies, the universities, and the other institutions of research, reports still appear occasionally in the scientific journals describing experiments whose painful or destructive character it would be hard to justify on the grounds of the value of the knowledge expected to result from them; it is probably reasonable to assume that more are done than become the subject of research papers. And the penalty of refusal of publication, being applied retrospectively, can only discourage repetition; it is unlikely to discourage first essays of this kind.

Much of the opposition of teachers and research workers to the proposed legislation arises from their fear that its result would be to circumscribe their work by the decisions of administrators ignorant of the scientific niceties that prescribe certain lines of experimentation as preferable to others, and to burden them with the spate of form filing that seems to be the accompaniment of most kinds of licensure; one fear, in particular, that has received a good deal of publicity, is that they will have to submit in advance detailed statements of the exact nature of the experiments they propose to do. Now, research is, by definition, an inquiry into the unknown; while it is true that just occasionally it may be possible to forsee the sequence of experiments needed to establish or refute a hypothesis, so that one might be able to describe to a licensing body the experiments to be performed, generally the design of each experiment is conditioned by the inferences drawn from the last, and the whole direction of a research project, perhaps even its purpose, may have to be altered in midstream if the inferences from the part completed indicate that this is desirable. It is clear then that legislation that would require specic approval of individual experiments would insuperably handicap the work of most scientists, and that even the individual licensing of whole projects would be a burden.

If I felt that such restrictions were necessary to avoid the occasional performance of cruel experiments by a small minority of experimenters, I, too, would argue that it were better not to legislate. But I do not think that this is needed. In my opinion, what should be done is—

(1) to designate the places in which experiments on living animals may be done; that is, the laboratories of the schools of science or medicine of most universities, of the independent medical research foundations, and of Government and industry;

(2) to license those who may do them, remembering that a license should be granted not as a status symbol but because the applicant demonstrates his serious intent to perform medical or biological research and his possession of the necessary academic qualifications for doing this; and

(3) to define the kinds of permission that would be given for experiments of a few different types. Thus, experiments calculated to cause no pain could be done at any time by any licensee without the administration of anesthesia; those calculated to cause pain, but done under anesthesia, and in which the animal was destroyed when the object had been achieved and before regaining consciousness, could be done at any time by any licensee, without his needing to obtain specific permission. The majority of experiments would fall in this category; for those in which the animal's survival was essential if the object of the research was to be achieved approval might be given for the whole of the research project; while for those in which the objective could not be achieved without inflicting pain, permission might be given for only one or a few repetitions of the experiment, after which the application would have to be renewed.

Obviously, it would be necessary to have a secretariat to issue licenses and to give permission for the performance of those experiments for which it was statutorily required. And it would be necessary to have an inspectorate to insure that the regulations were not flouted, and that standards of animal welfare were adequate. But if scientists could be assured that administration of the regulations would be in the hands of persons trained in biology or medicine, with understanding of the nature of experimental science, with sympathy for the aims and aspirations of medicine and science, and with a desire as great as their own to advance those aims, much of their opposition would, I think, disappear.

To my mind, the best way of insuring that this should happen is to accept the desirability of legislation, to cooperate in the drafting of the legislation, and to ask for a voice in the selection of those who will staff the agency that administers the regulations. For these reasons, I have been disappointed to note that the official and semiofficial pronouncements of some of the professional societies have for the most part ignored the distinction that ought to be made between the undesirability of any kind of legislation at all and the undesirability of bad legislation, or, what is more to the point, of badly administered legislation. Since the British Act of Parliament is regarded by many as the model for some of the provisions of H.R. 1937, many of the attempts to discredit this bill have taken the form of assertions that if the bill is made law, the medical or biological research worker will be subject to the same kind of punitive restriction that now makes unbearable the existence of his confreres in the United Kingdom. Leading articles in the scientific press, and letters to editors, have suggested that workers in the United Kingdom have their freedom to work restricted by the need to make repeated requests for permission to per-

form particular experiments, and by limitation of the kind of experiments they may actually do, and that their time is consumed by the endless filling out of forms.

From personal experience of the working of the British Act, I can deny the truth of these heart-wringing stories. As nearly as I can recall its wording, my own license gave me the right to perform experiments designed to "elucidate the physiological mechanisms of the cardiovascular, respiratory, digestive, excretory, reproductive, and nervous systems of mammals." Any lack of generality in these terms was due not to the restrictive hand of the Home Office but to my own failure to be more general when requesting the license. Provided I confined my experiments to species other than dogs or horses—a restriction that may perhaps be regarded as a concession to the well-known sentimentality of the English with regard to these species—did not intend the animals to survive the experiments, did not perform them without anesthesia (except for inoculations, injections, and simple venesection or venepuncture) or use relaxants, and did not demonstrate them except to other scientists, the application for this license was the only application that I had to make to be allowed to perform this wide variety of experimental procedures through the whole of my research and teaching career. At the same time that I applied for my license, I applied for and was granted the certificate that allowed me also to do all of these things as demonstrations for my students, and this one application sufficed for the whole of my professional career in the United Kingdom. Those of my colleagues who wished to perform survival experiments or experiments on dogs were granted blanket permission to do this for the duration of a particular research project, on the submission of a single application.

In the department in which I worked, the keeping of records was simple and far from time consuming. Each worker entered in a book, on a page or pages kept for his own use, the information required by statute and relevant to his own experiments. As I recall, this was: the date; animal species; whether or not, and, if so, how the animal had been made insensitive to pain; whether a relaxant had been used; and what additional certificates had been in force; that is, whether allowing survival, use of dogs, demonstration to students, and so forth. This, mostly written in abbreviations, and a signature, the whole occupying a single line of the page, was all that was needed as a record of a single experiment. Multiple experiments of a minor character—for example, the injection of a drug into a number of rates—could be covered by a single entry. At the end of the year, the departmental secretary made a summary of the number of animals operated on by each worker under license alone or under license plus one or more certificates; and these figures were used by each of us to complete the simple return—usually involving only one or two lines of entry on a form provided—that we had to submit to the House Office within the first few weeks of the new year. The only other requirement for us as individuals was to submit to the Home Office a single copy (reprint) of each paper that we published in which experiments performed under license were described.

I can say truthfully that I was never prevented from doing any experiment that I wished to do, that any requests that I made to the Home Office—for example, for blanket permission for the use of

relaxants in all of my experiments, or for permission to perform some experiments at an establishment not already approved for the purpose—were dealt with expeditiously and sympathetically, and that I did not find recordkeeping at all arduous. And I cite these facts to show that, with intelligent and sympathetic administration, a law to license vivisection need not restrict the performance of medical research or teaching.

I am unable to think of one of my friends and former colleagues—members of the British Physiological or Pharmacological Societies—who regards either the British Act itself or its application as being in any way restrictive of his scientific freedom or his teaching. On the contrary, most workers in the United Kingdom—and I think it is fair to say that this is also the official opinion of the professional organizations and the scientific societies—think of the act as a charter, guaranteeing them freedom, under its protection, to do their experiments without fear of malicious or mischievous prosecution.

I thank you for this opportunity to present testimony.

Mr. ROBERTS. Thank you, Doctor.

Doctor, I wanted to ask one or two questions.

You recall, I believe you advocated some type of control that might be, in my opinion, more far reaching than this bill goes.

Now, if you will look at the title of H.R. 1937, the enacting clause would state:

> Recipients of grants from the United States and by agencies or instrumentalities of the United States Government, and for other purposes.

Can the United States go any further than that title, in your opinion?

Dr. BERNSTEIN. Yes, sir, I believe it can, and I believe that it should.

If the objectives of this bill are desirable, then, obviously, it seems to me they are desirable in respect of all animal experimentation and not merely that which is performed under grants from the U.S. Government.

Mr. ROBERTS. I think you would run into a question of jurisdiction of States.

I believe you mentioned that there is some type of animal research that goes on in the teaching of biology and maybe other subjects in high schools. As you know, except in areas where impacted-area funds are provided, I know of no other way that we could impose any controls or restraints on U.S. funds.

That was my point in mentioning that there is certainly a limit, in my opinion—I may be wrong—as to how far we could go with Federal legislation if Congress were to approve it.

For instance, one example would be teaching in high schools. I do not see how we would reach that. That would have to be reached, in my opinion, by State legislation if such matters were to be given consideration in the bill.

Now, I take it that having practiced in Great Britain, you are very familiar with the British act?

Dr. BERNSTEIN. Yes, sir.

Mr. ROBERTS. Do you happen to know how long that act has been in existence?

Dr. BERNSTEIN. Something more than 80 years, sir.

Mr. ROBERTS. Something more than 80 years.

And, in your opinion, has it brought about any less research or any less effective research in Great Britain than would have otherwise been the case?

Dr. BERNSTEIN. No, sir.

Mr. ROBERTS. Do you take the viewpoint that proper care of the research animal could result in an even higher type of research, a better quality of research? Let us put it that way.

Dr. BERNSTEIN. I think it could, sir. I do not think that one could say that it was essential to research being better. The thing is that there are many kinds of research; there are many kinds of experiment; there are many objectives in experimentation. For some of these a well-cared-for animal, one that is not suffering pain, is absolutely essential; the objective of the experiment would be entirely lost if the animal were not well cared for, if it were, in fact, suffering pain. Pain is one of the causes of shock. A shocked animal is not physiologically normal. If you were trying to investigate the normal regulatory mechanisms of, for example, the circulatory system, then to do your experiments on a shocked animal would be scientifically stupid. Obviously, for experiments of this kind, the assurance the animal was properly anesthetized would be an absolutely essential requirement. I can think of other experiments where this would not be necessary, but, on the other hand, this does not mean that it would not be desirable.

Mr. ROBERTS. Do you know if there was a lot of opposition—I know that has been 86 years ago—do you know from the history of enactment of the British bill whether or not there was a lot of opposition to the bill at that time on the part of the medical profession?

Dr. BERNSTEIN. I do not think I am competent to answer that question, sir.

Mr. ROBERTS. So far as you know, has the bill been amended or changed in any respect from its original form?

Dr. BERNSTEIN. I think there have been occasional amendments. One of the important things about it is that its terms are unspecific and broad; this gives a great deal of power to the Home Secretary, who then provides by regulation under the act for changes that are needed. This, I think, has avoided the need for a good deal of subsequent amendment, but there have been minor amendments of the bill.

Mr. ROBERTS. Do you think that that same system might probably be the case if the Griffiths bill is adopted: that a good bit of it would be by regulation on the part of whatever Secretary is given, or Cabinet officer is given power under this bill?

Dr. BERNSTEIN. Yes.

It is a little difficult for me to comment about things of this kind; I feel a bit out of my depth and perhaps irresponsible in offering suggestions. I think that in administration of this kind much depends on getting the right sort of administrators. If an act of this sort is passed, one ought to beware of creating a regulatory agency in which the operational decisions were essentially made by people whose primary training was as administrators. There are plenty of people who have begun life, begun professional life, thinking that they would like to be medical research workers or teachers, and who have found that, while they have a great interest in and possibly a great technical aptitude for this work, they lack the peculiarity of mind that

would make them successful research workers. I think that these are admirable people to administer research, and I think that the administration of the proposed act would be an aspect of the administration of research. I think that an agency staffed by people of this kind could only help and further the progress of medical research.

Mr. ROBERTS. Do you think it might be well for us to consider in this bill the proposition of an advisory council that would be made up of members of the medical profession, surgeons and others, people from various laboratories in Government and in public, to be represented, in helping the Secretary to arrive at interpretation and application of this law?

Dr. BERNSTEIN. Most certainly, sir.

Mr. ROBERTS. I thank you very much, Doctor.

Any questions?

Dr. BERNSTEIN. Thank you, sir.

Mr. ROBERTS. I call next Mrs. Christine Stevens, president of the Animal Welfare Institute of New York, and I believe she will introduce two witnesses after she testifies.

STATEMENT OF CHRISTINE STEVENS, PRESIDENT, ANIMAL WELFARE INSTITUTE, NEW YORK, N.Y.

Mrs. STEVENS. I would like, if I may, to give the committee a few large pieces of literature, which you might wish to examine.

Mr. ROBERTS. Mrs. Stevens, it is a pleasure to have you before the committee. We recognize the fine work you did in connection with the humane slaughter bill, and I know that having the fine family background you have in the field of medicine and your great interest in this matter, that you have made a fine contribution, and we are very happy to have you and appreciate the fine record you have made in this field and in other fields.

Mrs. STEVENS. Thank you very much, Mr. Chairman.

You have copies of my testimony, so I am going to skim over some of it to try to keep the time down.

By giving you the copies of "Basic Care of Experimental Animals" and "Comfortable Quarters for Laboratory Animals," and the handbook on "The Care and Management of Laboratory Animals," I would attempt to set the position of the Animal Welfare Institute.

We have worked for 10 years providing information to scientists on a broad scale; some 17,000 copies of the basic care manual have been sent out on request to scientific institutions, and we have provided a great deal of other material which you will find listed in the testimony.

Mr. ROBERTS. Without objection, we will be glad to make this material available to the committee.

Mrs. STEVENS. To the committee, fine.

So, since this material has been so widely accepted in laboratories, one might ask why do we appear here to request that mandatory legislation for the humane treatment of experimental animals be passed.

The reason is that we have visited so many laboratories and found so much needless suffering in laboratories. Also, we have read literature and find much very severe suffering of animals. Further, we have had instances of great unreliability in laboratories.

I will skim over this and go directly to page 7 of my testimony, in an attempt to keep this material down, but I hope the committee will glance over those earlier pages.

Dr. Bernstein just referred to the use of animals by high school students, and men who wish to indoctrinate untrained youths in useless pain infliction cannot be expected to be concerned about unplanned and improperly conducted experiments inside scientific institutions. Many such experiments are not even submitted for publication, much less published. Such work involves none of the burdensome recordkeeping to which some opponents of H.R. 1937 have so passionately objected. I am sorry I am so far away because I do have some material that I would like to hand up to the committee.

You will find in my testimony references to abuse of student surgery in both medical and veterinary schools, and great cruelty inflicted.

I would also like to put into the record a letter by a medical student who withdrew from a medical school partly because of the cruelty—and I do not know that he withdrew entirely for that reason—such things as the kicking around of a crippled dog by animal handlers, and students throwing dogs into a tank which were supposed to be dead but which later came to life.

I have seen dogs in medical schools upon which a series of major operations have been done, pitiful, cringing, emaciated creatures, and the picture that I have given you in the Scientific Journal will gives you an idea of how they sometimes look.

Opponents of H.R. 1937 will tell this committee that even larger amounts of money than they are now receiving from the Government is all that is needed. It is our experience that in visiting new laboratories it is common to find large amounts of money spent on stainless steel and shiny tile, but these are far from being a guarantee of decent treatment of the animals. In a medical school fitted out with long stretches of gleaming corridors we found cats being kept in cages with nothing but wide-spaced one-way wires for floors. There were two cats in each of these cages, and in every case, one of them was perched on the feeding bowl to keep off the wires that pressed into their sensitive paws. What of the dogs in this institution? One lay dead, not even noticed by anyone, despite the endless assurances by the National Society for Medical Research of which I would like to give just one example, and you would perhaps like to again have the actual clipping.

It says:

RESEARCH DOGS ARE MORE PAMPERED THAN PETS, KID-GLOVES IN THE LAB

If a Texas millionaire wanted to give his pet hound the world's finest care, he would be hard put to equal the kid-gloves treatment which thousands of dogs receive today in modern animal research laboratories throughout the Nation.

This wildly untrue release was used, according to the NSMR, by 200 publications.

How does this jibe with a manual gotten out in the NSMR's home State and recommended by one of its most active board members?

I would like to have the committee have these two pages.

91142—62——6

Here is the University of Minnesota's recommendations on how to clean a dog cage:

> After feeding all of the dogs in the area assigned to you, go back and remove any dead dogs from their cages.

On the next page it shows how to hose a dog cage with the dog in it:

> Open the door slightly, holding it so the dogs cannot jump out. Run the nozzle over the top of the door as shown in the drawing at the right. Wash the walls and bottom grate. Then run the nozzle under the door to flush out the catch pan.

Incidentally, these quarters are new, less than 2 years old, so the decision to house dogs in basement cages three tiers high without provision for exercise and to hose the cages with the dogs inside was deliberate.

According to the St. Paul Dispatch, February 16, 1961, 700 dogs are housed thus, and a spokesman for the medical school was quoted as saying:

> Research is big business at the university. In fact, Government and foundations last year backed our medical research with more than $3 million in grants.

Business is a lot bigger this year with a total of $9,620,965 of the taxpayers' money given this university by the National Institutes of Health in 1961.

In a far western medical school with the same glossy corridors and expensively equipped operating rooms more than 100 dogs cowered and yelped in a steaming, windowless room which had just been hosed, dogs and all. Most pitiful were those whose painful and debilitating surgery prevented them from rising and who were soaking and shivering in the bottoms of the wet cages from which they would never be taken again unless it were for further experimentation or as carcasses.

All but a handful of the many millions of animals that enter our laboratories each year, dogs, cats, monkeys, rabbits, guinea pigs, hamsters, rats, and mice are, of course, killed in the laboratory. Some are lucky. They are anesthetized and never brought back to consciousness. Some, too, may take part in a painless test and be anesthetized and killed at the conclusion. But there are uncounted myriads of others whose death is inflicted in a slow and painful manner, and there is an enormous variety of ways in which they may be made to suffer and die in the laboratory. Many involve far more agony and terror than the methods Congress has outlawed for the slaughter of animals that provide us with food.

For example: exposure of rabbits to microwaves produces an extremely violent reaction. Within 5 minutes desperate attempts are made to escape from the cage. Peripheral engorgement of all vessels yields an acrocyanotic picture. The ears develop a "fried" or "cooked" appearance. Forty minutes of exposure results in death.

Or starving dogs to death, sometimes in conjunction with major operations. For example, in one experiment the dogs were subjected to two separate operations in which the surgical mortality was so high that the animals were not studied or standardized before surgery. (Complete bilateral paravertebral ganglionectomy and denervation of both adrenal glands.) It is reported that "one dog died during the

first fast and another during the first realimentation with casein." For when the dogs were finally allowed food, it was not a balanced diet. One was calculated to "show many features characteristic of a rather severe alarm reaction." The authors report that "Selye states that fasting is an alarming stimulus and sensitizes the animal to other alarming stimuli." The dogs, now having been subjected to two major operations, starvation up to 6 weeks, and feeding with an improper diet, "dermatitis, cutaneous ulcerations and alopecia" in the sympathectomized dogs "were much more frequent and often intense." The authors show their familiarity with starving dogs, stating:

> Normally, healthy dogs tolerate prolonged fasting surprisingly well. During the first 2 or 3 weeks they frequently appear stimulated and are unusually playful and lively, later their reactions are slowed but they are usually in good condition for as long as 5 to 6 weeks.

It should be recognized, however, that the layman's idea of "good condition" and that of some scientists are farther apart than the inexperienced person could believe possible. The fact is well demonstrated by the protographs of the dogs in the *Overholt Clinic* case. Dr. Frederick Panico who did major surgery on these dogs, using the heart-lung machine on them, described them as in "good condition" as the court record shows. Other witnesses emphatically contradicted this. For example:

> * * * we found 11 live dogs and the remains of a dead dog. Just outside the gate that entered the shelter, there was a thin black mongrel lying on its side. Part of its chest area had been clipped, and there was an open running wound about midway to the clipped area.

At autopsy, this dog was found to have more than a liter of pus within the heart sac and between 600 and 700 cubic centimeters of pus free in the chest cavity. So much for "good condition."

Now I would like to call attention to the monkey chair, which, I am sorry to say, is now being advertised for sale with the suggestion that this is the way to keep monkeys conveniently—"A new concept in monkey maintenance for research purposes."

I would like to emphasize the word "maintenance" because that means that these monkeys go into the chairs and they do not come out. In some cases they do, I would like to say, but this is a trend which is very serious.

I also have another picture which I have not bothered to send up now, showing Dr. John Lilly with a monkey in a monkey chair. He wrote in a popularization of laboratory activities the following:

> Electrical stimuli placed by means of fine wires in specific portions of the brain can cause either intense rewarding or intense punishing experiences in a particular animal and in humans. This has been demonstrated in rats, cats, monkeys, and in later years, dolphins.

One method is described as follows:

> The crescendo-stimulus method was worked out with the macaque (monkey). One puts in a train of stimuli that starts at zero intensity and during the next 15 seconds is gradually built up beyond the level at which the animal can stand it. A sophisticated animal will push the switch in order to stop the gradually increasing stimuli before they reach an unbearable level. * * * A monkey will miss and allow crescendo to go through its peak until he is so strongly stimulated that he is in a state of panic, when he cannot possibly shut the current off.

The monkey chair now being more and more widely used as standard equipment, thanks to Dr. Lilly and others at the NIH and Walter

Reed Army Institute of Research, is now considered a "living unit" according to a paper in the Proceedings of the Animal Care Panel, vol. 7, No. 2. Speaking of the old days before monkeys were kept in the equivalent of the stocks for months at a time, the paper states:

> The chair and strap arrangement allowed so much freedom of movement that the monkey often struggled for long periods of time to free itself and was often injured in the process.

In the newer models—

> It is usually necessary to grasp the hair on the monkey's head to guide it through this opening while the lower plate is raised still further. The lower plate is raised to the point where the monkey is effectively pinned between the seat and the upper plate, thus restricting his activity. * * * At this point the panels may be a little tighter than they will be for final adjustment since the tight panels serve to quiet the monkey. * * * It is necessary to check the monkey frequently for several days until it becomes accustomed to the chair. During this period its activity may loosen some of the adjustments or require that others be made. After the monkey has adapted to the chair, a regular inspection is required to check for decubitus—

that is, bed sores—

> which may occur at the neck and waist panels but is much more likely to occur in the region of the callosities.

The author, in an apparent burst of magnanimity, states that since it only takes 5 or 10 minutes to do—

> there is no reason why the monkey should not be taken out of the chair occasionally and put into a cage. This would help to maintain muscle tone, prevent decubitus (bed sores) and allow grooming.

However, he states that he has maintained monkeys in the chairs continuously for periods of 2 to 5 months, and "spinal preparations"; that is, monkeys whose spinal cords have been severed, for weeks in a slightly modified chair.

For additional examples, Senator Neuberger very kindly included in the record the Animal Welfare Institute Information Report, which I would otherwise have asked to have included.

It needs to be emphasized that a very substantial proportion of the actions being taken in a majority of animal laboratories would constitute prosecutable cruelty were they done by a private citizen outside the laboratory. Laboratories are specifically exempted in a number of States from the provisions of the anticruelty laws which apply to all other citizens. Even where there is no specific exemption, the ordinary anticruelty laws are not equipped to deal with this vast field any more than they were equipped to deal with slaughterhouse cruelty, to prevent which Congress so wisely intervened. Federal legislation is even more needed for laboratories than it was for slaughterhouses.

To take a few homespun examples, if a man took his cat and gave it electric shocks so strong that it stiffened out as if poisoned with strychnine, then when it had recovered from that he slapped it, shook it, held it by one leg—

> carried this kind of treatment of the extreme and prolonged (it) over many minutes—

until the unfortunate cat—and I am quoting from a scientific paper—presented the following picture—

> explosive autonomic discharge was seen, including panting, piloerection, defecation, urination, batting and clawing all at once.

If one saw this taking place, any decent citizen would call the police if he had not the courage to intervene personally. However, all this is published as a matter of course in the pages of "Science." Admittedly, it is much less painful than many of the procedures being carried out every day in hundreds of laboratories.

Again, in the simple matter of housing, here is a picture of a breeder's kennel. He was prosecuted and fined for breeding dogs in these cages. Yet I have repeatedly seen mother dogs with nursing puppies in even more crowded conditions in laboratories; such breeding has even been reported in scientific papers and the high mortality of the pups recorded.

Many more examples might be given, but these should suffice to show that a double standard exists, even at the lowest level.

The privilege which our civilization has extended to scientists is being abused. The uninformed believe that animals are used for experiments only when it is really necessary, that they are decently housed and cared for and that avoidable pain is prevented with care and assiduity. If H.R. 1937 is enacted into law and its provisions properly administered, this belief will be correct, but at the present time, it is very far from the case.

Very briefly, I will go over the points, the reasons, why H.R. 1937 can bring animal experimentation in our country up to civilized standards.

First, by careful inspection of laboratories by men whose character and training fit them for the work. As you are aware, H.R. 1937 is based on legislation which has been successfully in effect in Britain since 1876, and in the administration of this bill, we would urge a careful study of the means whereby the British act has accomplished so much good for animals and for science, too. All inspectors under the act in Britain have medical qualifications. Medical training alone is not enough, however, the inspectors must have humane regard for animals and firm moral character.

Second, by placing individual responsibility on each scientist who uses animals. This is accomplished by licensing, and it should be emphasized that individual licensing is one of the most important, perhaps the most important reason why the British act, though so moderate, is so effective. There would be no purpose in passing any bill in our country for the purpose of requiring humane treatment of experimental animals if the bill does not include individual licensing. Opponents wish to dispense with this vital provision knowing that the bill cannot be enforced without it. We have had long experience in observing the operation of State laws, most of them passed at the behest of the NSMR for the purpose of procuring animals. These laws provide for the licensing of institutions, and, in theory, the license might be withdrawn for cause, but an infraction of the law calling for suspension or revocation of license would put a halt to all animal experiments throughout the institution. The result of such legal draftsmanship is that the innocent must suffer with the guilty or the law is never enforced. The latter is generally the case. Clearly, Congress ought not to follow this highly unsatisfactory pattern.

Third, by the limitation of pain infliction amounting to torture. In England, every license carries with it a series of conditions, among them those known as the pain conditions which provide that animals

that are suffering must be painlessly killed as soon as the main result of the experiment has been achieved and that if an animal "is found to be suffering severe pain which is likely to endure, such animal shall forthwith be painlessly killed." Further, if an inspector finds an animal suffering considerable pain and directs that it be destroyed, this shall be done at once. These principles have been incorporated in H.R. 1937.

Fourth, minimum standards of care and comfortable housing are required.

Fifth, student work, as distinct from research conducted by qualified scientists, must be painless.

Sixth, records adequate to allow the inspectors to enforce the law are required. Because an issue has been made on this subject by opponents of H.R. 1937, the allegations of "redtape" and "burdensome recordkeeping" should be carefully examined. To be a modern scientist and not keep records is obviously unthinkable. The greater the emphasis on the statistical approach the more records necessarily have to be kept. This is not the fault of H.R. 1937, which asks no more, so far as records and identification of cages or animals, than every responsible scientist now keeps. The false rumor has been spread that each individual animal used (for example, a thousand mice in a single experiment) would have to have a separate piece of paper filled out for it and that that is what British scientists are now doing. It should be obvious to any thinking person that this is not the case—as one British scientist now working in the United States put it:

> Reading some of the propagandist literature circulated to me recently by the scientific societies of which I am a member, I have had a feeling of unreality about the whole affair, engendered by my inability to recognize, in their descriptions of the restrictions and burdens under which their British colleagues labor, the system under which I worked for so many years; sometimes I have wondered what cloud-cuckoo land they have confused with Great Britain.

H.R. 1937 is in no way more demanding than the British act upon whose principles it is based. The record in question would show what the responsible research worker must know if his work is to have any meaning: How many animals, what procedure was used on them, what happened to them. All well-run laboratories have cages or animals, or both, marked so that they do not get mixed up. H.R. 1937 would require all laboratories that receive Federal funds to come up to proper standards in this respect. I have been in many laboratories where cages are unmarked or have old marking unrelated to their current occupants. In one hospital, I observed dogs whose cages were identified with the name of a doctor who had not used dogs for 2 years.

Another aspect of the so-called redtape which has been attacked are the project plans. Every scientist who gets a grant from the Federal Government has to present his experimental plans in far greater detail than anything called for in H.R. 1937. He has to wait considerable periods before he learns whether his grant has been accepted or not. Unscrupulous opponents of H.R. 1937 have deliberately misled many scientists into believing that the same would hold true with regard to the submission of project plans in this bill. The truth is that the bill was most carefully drawn to prevent any possible delay. Project plans must be prefiled, not preapproved. There can be no delay because the scientist is at liberty to proceed as soon as his plan is on file.

Supposing that he later finds a different promising avenue of approach, will his original project plan cover him legally? If there were no difference in the procedures relating to animal suffering, it probably would. If, on the other hand, he decided to change from an experiment involving no pain to one involving pain, he would clearly have to let the Secretary know of this change. I have some plans as used under the British act, if the committee wishes to examine them. As you can see, they are brief.

What is the purpose of filing project plans? From the moral standpoint, to encourage the most humane design of experiments. From the practical standpoint, to make possible effective enforcement of the measure without needlessly wasting the time of the scientist or the inspector. If inspectors had to start from a basis of complete ignorance of the experiments being carried on, they would have to ask a great many questions, get corroboration from others, and end up perhaps with a confused report, aggravating to all concerned. But when the inspector has the facts in hand, the project plans clearly in mind, and finds the cages properly marked, he can do an efficient job of inspection within a short time, and, if all is in order, be on his way again.

H.R. 1937 would not in any way hamper humane and responsible scientists. An even stricter law in England has not hampered them. In England the experimental plans must have prior approval from the Home Office. Under H.R. 1937 the potential delay which conceivably might occur in our much larger country has been eliminated by placing the burden on the Secretary to disapprove if he believes the law is being violated, but not to require prior approval.

At the end of the year each licensee would send to the Secretary of Health, Education, and Welfare reprints of his work published during the year and a brief report on the number of animals used, procedures used, and names of coworkers. Thus, the previous records are annually confirmed. Here is a sample of the one-page form for the animal report under the British law. As you can see, it is not demanding. No more than half an hour would be required to fill it out.

To conclude the list of basic principles of the bill, it should be noted that it applies to all vertebrate animals. These are the animals whose central nervous system is more or less similar to our own, who have brains and spinal cords and nerves which, among the mammals especially, closely follow the human pattern. It is clearly essential that all these creatures be treated with humane consideration.

I would like to place in the record a letter from Dr. P. L. C. Carrier, recently retired Chief Inspector, carrying out the provisions of the British act of 1876. I hope that we may have a man of equal stature working directly from the Secretary's Office, not—and I wish to emphasize this point—from the National Institutes of Health or the Public Health Service, to administer H.R. 1937.

H.R. 1937 is a very moderate bill. It is opposed both by those who say it is too strong and those who say it is too weak. It is not a bill that aims to punish, rather it provides a strong incentive for humane design of experiments and humane care of animals. At present, there is virtually no incentive for scientists to plan experiments humanely—the only one I know is that I mentioned earlier by the American Physiological Society, and it is weak and variable. But if a scientist were aware that his project plan might not be accepted if his plan-

ning were needlessly inhumane, he would take the trouble to devise a more humane method. If he knows his license might be suspended or even revoked for failure to comply with the humane requirements of the law, he would take the trouble to see that his animals were decently cared for and not abused. Other proponents of this legislation will, no doubt, emphasize the waste of funds that is a concomitant of the irresponsible attitude with respect to animals which is so widely seen in laboratories today, so I will merely point out that while the cost of administering H.R. 1937 would not be great, the amount of taxpayers' funds it would save would be very large indeed. And in saving these funds it would simultaneously be saving something much more important—a thing which it is essential to save if we are to call ourselves civilized—that is, needless suffering of animals being used for our benefit to protect us against the sickness and annihilation that we fear.

Thank you very much, Mr. Chairman.

(The complete prepared statement of Mrs. Stevens is as follows:)

TESTIMONY IN FAVOR OF H.R. 1937 AND S. 3088 FOR THE HUMANE TREATMENT OF EXPERIMENTAL ANIMALS BY CHRISTINE STEVENS, PRESIDENT, ANIMAL WELFARE INSTITUTE, NEW YORK

For the past decade the Animal Welfare Institute has devoted the major part of its resources to studying the treatment of experimental animals in this country and to improving that treatment by the means now available. In the course of this effort, we have visited scientific institutions throughout the Nation and have provided advice and information to thousands of scientists, administrators, and technicians. For example, more than 17,000 copies of this manual, "Basic Care of Experimental Animals," have been requested from us by institutions in 48 States and 43 foreign countries, and we have provided them in all cases free of charge in an effort to help animals and science.

Here is another manual provided by the Animal Welfare Institute free to scientific institutions which are planning new animal quarters or remodeling old ones. It is entitled "Comfortable Quarters for Laboratory Animals." Architects' floor plans and photographs of existing good quarters are collected together, and new supplements are brought out to keep this publication—the only existing one of its kind—up to date. We put these together by hand with the help of volunteer workers, and are just now completing the filling of requests from over 600 laboratories as a result of the new supplement. We provide at cost the film, "Handling Laboratory Animals," and the 951-page text, "The UFAW Handbook on the Care and Management of Laboratory Animals," published by the Universities Federation for Animal Welfare, "An Introduction to the Anesthesia of Laboratory Animals," by Dr. Phyllis Croft, and until recently, "The Principles of Humane Experimental Technique," by Russell and Burch. We send our bimonthly information reports to all the 7,000 members of the Federation of American Societies for Experimental Biology and to many other scientists and medical men. We have provided speakers (for example, an expert on animal technician training) and specific advice on request. In short, our educational effort has been arduous and continuous, and we often find the materials we distribute in evidence in the course of laboratory visits.

Why, then, since our educational work in animal care seems to have had such an encouraging reception from scientists do we urge enactment of mandatory Federal laws to require humane treatment of these animals? The answer is simple: Our inspections of the actual animals in laboratories and examination of published literature on their use reveals great cruelty, callousness, and neglect in laboratory after laboratory throughout our Nation. Further, it has been disappointing to find that a rational and courteous approach to obtaining decent treatment of animals so often fails, whereas on those occasions in which adverse publicity was brought to bear, the need changes were made. This is disappointing because we would all like to believe the claims, so often put forward by opponents of H.R. 1937, of unfailing wisdom, kindliness, and responsibility of laboratory directors with respect to the animals in their institutions. It is regrettable that we cannot simply put our trust, as the opponents urge us to do,

in all deans and directors of laboratories, and I would like to give some examples from our experience typifying the situation as it exists today—without mandatory legislation for the protection of experimental animals—showing why in so many instances voluntary control by these men has not prevented, and will not prevent, cruelty in laboratories.

The first problem is unreliability. Let me give you examples from some well-known institutions. (Names of institutions and individuals will be provided on request if the chairman desires them.)

(1) In more than one instance, doctors in charge of 100 or more laboratory dogs stated that they were exercised regularly in runways which they showed us. Checkups revealed that the runways were not used.

(2) The director of a large medical school about whose treatment of animals we have been complaining for 6 years, wrote to an indivldual who requested permission to visit the animals, "I can assure that we extend ourselves to the utmost to make sure that animals used for research in our medical center are given the very best and most humane care. We are proud that we have met the strict requirements of the ASPCA as well as those of the Animal Welfare Institute. Beyond the two organizations mentioned above, we do not encourage visitation to our animal quarters since we are careful to protect them from exposure to unaccustomed people or possible contamination. Your interest in our animals, however, is deeply appreciated." To give you some idea of this particular doctor's idea of extending himself to the utmost, let me read you the notes we published on a visit to his laboratory (information report, vol. 11, No. 1): "All dogs caged, never released for exercise. Three emaciated dogs curled up and uninterested even though most of the dogs were barking furiously. A gray poodle with incredibly matted fur, with food and filth stuck in it. ——— said he had trimmed it once, so it must have been there for a long time. The dog did not respond in any way but stood mute and motionless in its cage. A black and tan mongrel was too tall to hold its head normally. When standing, the dog's back was rubbing against the top of the cage. The university refused to build cages any bigger despite urgent requests to do so when the building was first constructed. Postoperative dog room: many were too sick to rise, some had had two operations. One heart surgical case was emaciated, had a tremor, and lacked one eye from which red flesh extruded. ——— first explained dog's condition as brain surgery, but later decided the dog had lost his eye and developed chorea before coming to ———. Apparently, this did not deter its use for heart surgery. The dog drank water almost continuously. No attendants in any of the dog rooms. Asked if dogs as sick as those we had seen can get up for hosing of cages ——— said they could. He said none of the dogs we saw had been given any sedation * * *. Many rabbits, like some of the dogs, were in cages too small to stretch out in normal resting position. Two rabbits quite often were squeezed into one such small cage. Their noses were running in many instances and there were sounds of coughing. The room was very hot and ammonia prickled the observer's nostrils. Rats were generally better housed though some were extremely overcrowded despite the presence of empty cages, and some had been blinded by radiation till their eyes actually disappeared. Mice had the most comfortable cages of all the animals."

Naturally we lodged a strong protest against the use of our good name to whitewash these conditions, and we received a letter admitting that our name had been used in error. When I requested permission a few weeks ago for a visiting British scientist and animal welfare worker to visit, I was referred to the public relations department and was told, "Send her to Cornell or somewhere, but not here." According to the "Summary Tables for the Total Extramural Program" of the Public Health Service grants and awards by the National Institutes of Health, this institution received more than $7 million of the taxpayers' money in 1961. For that amount of money, I think we can expect to have at least such obvious desiderate as a few pens to which dogs can be taken for exercise.

To complete this group of instances, I would like to read the testimony prepared by Mrs. Frank Wilson who is unable to be present in Washington.

"STATEMENT OF MRS. FRANK WILSON IN SUPPORT OF H.R. 1937 AND S. 3088

"I would like to put on record my experience of visiting the animal quarters of a well-known New York City hospital in the summer of 1961. I went there as a representative of the Animal Welfare Institute, which has access to the animal quarters of the hospital under the terms of a legal agreement entered into by a lady who sold her home to the hospital.

"The institute set out to investigate after seeing a newspaper report that a dog had fallen off the roof of the hospital, smashing through the windshield of a car parked in the street below. The hospital was quoted in the paper as saying that the dog had squeezed through a hole in a wire fence surrounding the exercise area on the roof. When I arrived I found that there was no fence. The dogs were simply turned loose on the roof, around the edge of which there was nothing but an obviously inadequate knee-high concrete ledge which was part of the original structure of the building. No attempt had been made to adapt the roof for use as an exercise pen.

"I found that the experimental dogs were kept in small, dirty, mesh-bottom cages with no bedding, in a dark, dirty, smelly little room that was so infested that not only the animals but the floor and walls were alive and crawling with various kinds of vermin. These vermin were breeding in a heap of excrement; they were so thick on the floor that they were walking over my feet as I stood there. This in the same building as a supposedly sanitary hospital area.

"The dogs were to be used for heart surgery and blood donations and some were sick: yet they were left without water on a hot summer day, because the water pans designed to fit the cages had rusted through so they would not hold water and nothing had been done about it.

"Having seen these conditions, the Animal Welfare Institute complained to the hospital authorities. We were told that little could be done because the ticks and vermin had become immune to insecticides, and in any case, Dr. A., who was in charge of the animal quarters, was on vacation in Europe.

"At this point a reporter on the New York Post investigated the situation and a very critical story about conditions in the hospital appeared.

'I then paid a second visit to the animal quarters and found that the heaps of excrement had been removed and the 'unkillable' vermin exterminated. I also saw hanging on the wall a certificate licensing these animal quarters under the New York State Hatch-Metcalf Act. I had not seen this certificate before and it is my belief that it was not in its place at the time of my first visit. The certificate stated that Dr. B. was in charge of the animal quarters. Dr. B. was not the Dr. A. we were told was on vacation in Europe: so far from that, Dr. B. was working in the hospital the whole time and receiving a Federal research grant of approximately $60,000.

"In my opinion this laboratory was being run in an irresponsible way. It is doubtful whether research on animals kept in grossly insanitary conditions after major surgery, without sufficient drinking water, is sufficiently conclusive to merit the expenditure of large sums of public money on it. Furthermore, to allow such a heavy infestation of vermin to develop in a hospital, and to allow dogs to run on an open roof, seems to me to show a culpable disregard for the health and safety of the public. I also believe that the conditions in the hospital caused considerable unnecessary suffering to the experimental animals.

"I understand that H.R. 1937 would curb such abuses as I have described, and I sincerely hope such legislation will be adopted."

That is the end of Mrs. Wilson's statement.

The attitude of the progressive educator has invaded research laboratories in a form that often paralyzes any action against cruelty by individuals. For example, one medical school dean assured me that cruel people "could get off in a corner and do it anyway." He seemed to take the side of these sadistic characters when he spoke about the pending legislation and with apparent relish remarked, "If I wanted to I could hide everything away and fool the inspector through the whole medical center." One wondered what he felt needed hiding in this institution which last year received $22 million from the U.S. Public Health Service.

Another laboratory director exemplifies a different aspect of the same problem. He lacks the courage to stop cruel experimentation in his own institution even though he personally disapproves of it. All humane scientists are concerned about the improper use of the drug, curare, and the many synthetic substitutes for this paralyzing drug now available. As you know, these muscle relaxants cause a human being or animal to lie limp, motionless, and completely helpless without the power to move or cry out no matter how terrible the pain being suffered. So concerned did the officers of the American Physiological Society become over misuse of these drugs that in 1959, Dr. R. F. Pitts, in the president's message published in the Physiologist, recommended that the members of the editorial board of the American Journal of Physiology act as arbiters of humane experimental design. He said this task would not be relished, but "my personal

view is that each editor must be exactly that [an arbiter] in as impartially a scientific sense as he is the arbiter of the scientific adequacy of the man's experimental design and the validity of his conclusions. The American Physiological Society could scarcely condone by publication results obtained in experiments violating our accepted code for the humane care and use of animals." Subsequently the society adopted the policy whereby papers could be refused for publication if they did not meet the editors' humane standards. Two such cases have come to my attention. In one, the director of the laboratory referred to above did not approve of the experiments on curarised dogs, yet he permitted these and other painful experiments to be done and left it to the editors of the American Journal of Physiology to say in effect, "This is too cruel. We cannot condone it, and we will not publish it."

The National Society for Medical Research, chief opponent and organizer of scientific opposition to H.R. 1937, sent out a survey to the editors of 465 scientific journals to ask them "how they feel about censorship of scientific reports on humane grounds." They gleefully reported that less than 1 percent of those who replied would refuse to publish on these grounds. In short, the view of the NSMR and such editors as wrote to it, is that no torment is too frightful, no agony too prolonged to be inflicted in the name of science—or as Dr. Maurice Visscher put it, "There can be no cruelty in the pursuit of knowledge."

These are chilling thoughts, but they must be faced squarely, for this ruthless ideology has adherents in many laboratories, and its proponents are seeking to develop it wherever they can, in high school and even, sometimes, in grade school children, by teaching them to perform painful experiments on animals—experiments which can provide no useful knowledge but which create callousness and offer fertile ground for any sadistic tendencies to grow.

Men who wish to indoctrinate untrained youths in useless pain infliction cannot be expected to be concerned about unplanned and improperly conducted experiments inside scientific institutions. Many such experiments are not even submitted for publication, much less published. Such work involves none of the burdensome recordkeeping to which some opponents of H.R. 1937 have so passionately objected, I will mention just one of the reports we received, in which a student cut legs off frogs and put the still living animals in various fluids to see if the legs would regenerate. No one hindered this crude parody of a scientific experiment.

Here is a report we received on student surgery in a leading veterinary college: "Whenever dogs were to be operated on, they were by many surgical teams allowed to come so far out of their anesthesia that they actually made attempts to rise and walk. It is unnecessary to describe, is it not, just how unpleasant a series of sensations must have been felt by these victims, with the tops of their skulls chopped off, their carotid arteries exposed and cannulated and several nerves exposed?"

I have seen dogs in medical schools upon which a series of major operations has been done, pitiful, cringing, emaciated creatures. Let me show you a picture from a scientific journal that will give you an idea of how some of the dogs in laboratories look. Fortunately, there is some tendency away from this type of practice surgery course, for example, the University of Florida Medical School recently eliminated this course from the curriculum. However, others still cling to the practice. That it leads to grave abuses even beyond the long-drawn-out pain caused by the series of operations will be testified to by another witness, and I would quote from a letter from a student who writes that "Veterinary students at ——— do survival surgery on dogs. They do a series of operations such as opening the stomach, removing the spleen, removing parts of the intestine and joining it together again, routine castration and spaying, and other operations. The dogs become thin and pitiful looking and if they become ill as a result of the operations, they receive no treatment because they are going to die anyway. The doors of the kennel are closed at 5 p.m. so that if the operation is done late in the afternoon, the student cannot see that the dog comes out of the anesthetic all right. It is stated that dogs are hard to get. Owned dogs which owners have asked to have desroyed and which have been left at the veterinary college with that understanding are sometimes used for the surgery classes and kept alive for a series of operations by students. The owners are not aware of this."

Opponents of H.R. 1937 will tell this committee that even larger amounts of money than they are now receiving from the Government is all that is needed. It is our experience that in visiting new laboratories it is common to find large

amounts of money spent on stainless steel and shiny tile, but these are far from being a guarantee of decent treatment of the animals. In a medical school fitted out with long stretches of gleaming corridors we found cats being kept in cages with nothing but wide-spaced one-way wires for floors. There were two cats in each of these cages, and in every case, one of them was perched on the feeding bowl to keep off the wires that pressed into their sensitive paws. In this same institution we saw a big jar full of white mice, piled on top of each other, upon which it was proposed to pour a bottle of liquid ether in order to kill them, the burning qualities of the liquid being disregarded. Here, too, we learned that large numbers of mice were dying of what the highly paid research worker thought was a mysterious disease but which turned out to be his failure to see that the animals upon which his research depended were given food that they could get their teeth into. They were being starved to death by ignorance and irresponsibility. What of the dogs in this institution? One lay dead, not yet observed by anyone, despite the endless assurances by the National Society for Medical Research of which I would like to give just one example. "Research dogs are more pampered than pets, kid gloves in the lab. If a Texas millionaire wanted to give his pet hound the world's finest care, he would be hard put to equal the kid-gloves treatment which thousands of dogs receive today in modern animal research laboratories throughout the Nation." This wildly untrue release was used, according to the NSMR by 200 publications. How does this jibe with a manual gotten out in the NSMR's home State and recommended by one of its most active board members?

Here is the University of Minnesota's recommendations on "how to clean a dog cage * * * after feeding all of the dogs in the area assigned to you, go back and remove any dead dogs from their cages." On the next page it shows how to hose a dog cage with the dog in it: "Open the door slightly, holding it so the dog cannot jump out. Run the nozzle over the top of the door as shown in the drawing at the right. Wash the walls and bottom grate. Then run the nozzle under the door to flush out the catch pan." Incidentally, these quarters are new, less than 2 years old, so the decision to house dogs in basement cages three tiers high without provision for exercise and to hose the cages with the dogs inside was deliberate. According to the St. Paul Dispatch, February 16, 1961, 700 dogs are housed thus, and a spokesman for the medical school was quoted as saying, "Research is big business at the university. In fact, Government and foundations last year backed our medical research with more than $3 million in grants." Business is a lot bigger this year with a total of $9,620,965 of the taxpayers' money given this university by the National Institutes of Health in 1961.

In a far western medical school with the same glossy corridors and expensively equipped operating rooms more than 100 dogs cowered and yelped in a steaming windowless room which had just been hosed, dogs and all. Most pitiful were those whose painful and debilitating surgery prevented them from rising and who were soaking and shivering in the bottoms of the wet cages from which they would never be taken again unless it were for further experimentation or as carcasses.

All but a handful of the many millions of animals that enter our laboratories each year, dogs, cats, monkeys, rabbits, guinea pigs, hamsters, rats, and mice are, of course, killed in the laboratory. Some are lucky. They are anesthetized and never brought back to consciousness. Some, too, may take part in a painless test and be anesthetized and killed at the conclusion. But there are uncounted myriads of others whose death is inflicted in a slow and painful manner, and there is an enormous variety of ways in which they may be made to suffer and die in the laboratory. Many involve far more agony and terror than the methods Congress has outlawed for the slaughter of animals that provide us with food. For example: exposure of rabbits to microwaves "produces an extremely violent reaction. Within 5 minutes desperate attempts are made to escape from the cage. Peripheral engorgement of all vessels yields an acrocyanotic picture. The ears develop a 'fried' or 'cooked' appearance. Forty minutes of exposure results in death." Or starving dogs to death, sometimes in conjunction with major operations, for example, in one experiment the dogs were subjected to two separate operations in which the surgical mortality was so high that "the animals were not studied or standardized before surgery." ("Complete bilateral paravertebral ganglionectomy and denervation of both adrenal glands.") It is reported that "one dog died during the first fast and another during the first realimentation with casein." For when the dogs were

finally allowed food, it was not a balanced diet. One was calculated to "show many features characteristic of a rather severe alarm reaction." The authors report that "Selye states that fasting is an alarming stimulus and sensitizes the animal to other alarming stimuli." The dogs, now having been subjected to two major operations, starvation up to 6 weeks, and feeding with an improper diet, "dermatitis, cutaneous ulcerations and alopecia" in the sympathectomized dogs "were much more frequent and often intense." The authors show their familiarity with starving dogs, stating: "Normal, healthy dogs tolerate prolonged fasting surprisingly well—during the first 2 or 3 weeks they frequently appear stimulated and are unusually playful and lively, later their reactions are slowed but they are usually in good condition for as long as 5 to 6 weeks."

It should be recognized, however, that the layman's idea of "good condition" and that of some scientists are farther apart that the inexperienced person, could believe possible. The fact is well demonstrated by the photographs of the dogs in the *Overholt Clinic* case. Dr. Frederick Panico who did major surgery on these dogs, using the heart-lung machine on them, described them as in "good condition" as the court record shows. Other witnesses emphatically contradicted this. For example, "* * * we found 11 live dogs and the remains of a dead dog. Just outside the gate that entered the shelter, there was a thin black mongrel lying on its side. Part of its chest area had been clipped, and there was an open running wound about midway to the clipped area." At autopsy, this dog was found to have more than a litre of pus within the heart sac and between 600 and 700 cubic centimeters of pus free in the chest cavity. So much for "good condition."

Other photographs may help to demonstrate other kinds of suffering. For example, these white rats have been forced to swim to complete exhaustion. Some have sunk, and others are sinking. Once they have gone through this desperate attempt to keep from drowning, they are taken from the tank, and "After a specific period the animals must again swim to exhaustion." A report on a commercial drug in the American Journal of Medicine April 1962, glibly refers to the "rat swim" test which is used as a standard measurement.

Here is an illustration of another standard device advertised in scientific journals: "This low cost restraining cage and holder," the ad runs, "for rats permits rapid and safe immobilization of animals. It can be used for extended housing of rats during nutritional studies, when animals must be kept from attacking tubes and other fixtures." As the illustration shows, the rat cannot turn or stand because the so-called cage fits him more snugly than a coffin fits a human body. Note the invitation to use it for "extended housing."

Here you see a monkey in a monkey chair. His brain has been stimulated with electricity. With him is Dr. John Lilly who wrote in a popularization of laboratory activities,[1] "electrical stimuli placed by mean of fine wires in specific portions of the brain can cause either intense rewarding or intense punishing experiences in a particular animal and in humans. This has been demonstrated in rates, cats, monkeys, and in later years, dolphins." One method is described as follows: "The cresendo-stimulus method was worked out with the macaque (monkey). One puts in a train of stimuli that starts at zero intensity and during the next 15 seconds is gradually built up beyond the level at which the animal can stand it. A sophisticated animal will push the switch in order to stop the gradually increasing stimuli before they reach an unbearable level * * *. A monkey will miss and allow crescendo to go through its peak until he is so strongly stimulated that he is in a state of panic, when he cannot possibly shut the current off."

The monkey chair now being more and more widely used as standard equipment, thanks to Dr. Lilly and others at the NIH and Walter Reed Army Institute of Research, is now considered a "living unit" according to a paper in "The Proceedings of the Animal Care Panel," volume 7, No. 2. Speaking of the old days before monkeys were kept in the equivalent of the stocks for months at a time, the paper states, "The chair and strap arrangement allowed so much freedom of movement that the monkey often struggled for long periods of time to free itself and was often injured in the process." In the newer models "It is usually necessary to grasp the hair on the monkey's head to guide it through this opening while the lower plate is raised still further. The lower plate is raised to the point where the monkey is effectively pinned betwen the seat and

[1] "Man and Dolphin," by Dr. John Lilly.

the upper plate, thus restricting his activity. * * * At this point the panel may be a little tighter than they will be for final adjustment since the tight panels serve to quiet the monkey. * * * It is necessary to check the monkey frequently for several days until it becomes accustomed to the chair. * * * During this period its activity may loosen some of the adjustments or require that others be made. After the monkey has adapted to the chair, a regular inspection is required to check for decubitus—which may occur at the neck and waist panels but is much more likely to occur in the region of the callosities." The author in an apparent burst of magnanimity states that since it only takes 5 or 10 minutes to do "there is no reason why the monkey should not be taken out of the chair occasionally and put into a cage. This would help to maintain muscle tone, prevent decubitus (bed sores) and allow grooming." However, he states that he has maintained monkeys in the chairs continuously for periods of 2 to 5 months, and "spinal preparations" that is, monkeys whose spinal cords have been severed, for weeks in a slightly modified chair.

For additional examples, I should like to place in the record those included in this recently published Information Report of the Animal Welfare Institute.

It needs to be emphasized that a very substantial proportion of the actions being taken in a majority of animal laboratories would constitute prosecutable cruelty were they done by a private citizen outside the laboratory. Laboratories are specifically exempted in a number of States from the provisions of the anti-cruelty laws which apply to all other citizens. Even where there is no specific exemption, the ordinary anticruelty laws are not equipped to deal with this vast field any more than they were equipped to deal with slaughterhouse cruelty, to prevent which Congress so wisely intervened. Federal legislation is even more needed for laboratories than it was for slaughterhouses.

To take a few homespun examples, if a man took his cat and gave it electric shocks so strong that it stiffened out as if poisoned with strychnine, then when it had recovered from that he slapped it, shook it, held it by one leg—"carried this kind of treatment of the extreme and prolonged (it) over many minutes" till the unfortunate cat (and I am quoting from a scientific paper) presented the following picture, "explosive autonomic discharge was seen, including panting, piloerection, defecation, urination, batting and clawing all at once." If one saw this taking place, any decent citizen would call the police if he had not the courage to intervene personally. However, all this is published as a matter of course in the pages of "science." Admittedly, it is much less painful than many of the procedures being carried out every day in hundreds of laboratories.

Again, in the simple matter of housing, here is a picture of a breeder's kennel. He was prosecuted and fined for breeding dogs in these cages.[2] Yet I have repeatedly seen mother dogs with nursing puppies in even more crowded conditions in laboratories; such breeding has even been reported in scientific papers and the high mortality of the pups recorded.

Many more examples might be given, but these should suffice to show that a double standard exists, even at the lowest level.

The privilege which our civilization has extended to scientists is being abused. The uninformed believe that animals are used for experiments only when it is really necessary, that they are decently housed and cared for and that avoidable pain is prevented with care and assiduity. If H.R. 1937 is enacted into law and its provisions properly administered, this belief will be correct, but at the present time, it is very far from the case.

How can H.R. 1937 bring animal experimentation in our country up to civilized standards?

First, by careful inspection of laboratories by men whose character and training fit them for the work. As you are aware, H.R. 1937 is based on legislation which has been successfully in effect in Britain since 1876, and in the administration of this bill, we would urge a careful study of the means whereby the British Act has accomplished so much good for animals and for science too. All inspectors under the act in Britain have medical qualifications. Medical training alone is not enough, however; the inspectors must have humane regard for animals and firm, moral character.

Second, by placing individual responsibility on each scientist who uses animals. This is accomplished by licensing, and it should be emphasized that individual licensing is one of the most important, perhaps the most important reason why the British act, though so moderate, is so effective. There would

[2] From Animaldom, December 1961.

be no purpose in passing any bill in our country for the purpose of requiring humane treatment of experimental animals if the bill does not include individual licensing. Opponents wish to dispense with this vital provision, knowing that the bill cannot be enforced without it. We have had long experience in observing the operation of State laws, most of them passed at the behest of the NSMR for the purpose of procuring animals. These laws provide for the licensing of institutions, and, in theory, the license might be withdrawn for cause, but an infraction of the law calling for suspension or revocation of license wolud put a halt to all animal experiments throughout the institution. The result of such legal draftmanship is that the innocent must suffer with the guilty or the law is never enforced. The latter is generally the case. Clearly, Congress ought not to follow this highly unsatisfactory pattern.

Third, by the limitation of plain infliction amounting to torture. In England, every license carries with it a series of conditions, among them those known as the pain conditions, which provide that animals that are suffering must be painlessly killed as soon as the main result of the experiment has been achieved and that if an animal "is found to be suffering severe pain which is likely to endure, such animal shall forthwith be painlessly killed." Further, if an inspector finds an animal suffering considerable pain and directs that it be destroyed this shall be done at once. These principles have been incorporated in H.R. 1937.

Fourth, minimum standards of care and comfortable housing are required.

Fifth, student work, as distinct from research conducted by qualified scientists, must be painless.

Sixth, records adequate to allow the inspectors to enforce the law are required. Because an issue has been made on this subject by opponents of H.R. 1937, the allegations of "redtape" and "burdensome recordkeeping" should be carefully examined. To be a modern scientist and not keep records is obviously unthinkable. The greater the emphasis on the statistical approach the more records necessarily have to be kept. This is not the fault of H.R. 1937, which asks no more, so far as records and identification of cages or animals, than every responsible scientist now keeps. The false rumor has been spread that each individual animal used (for example, a thousand mice in a single experiment) would have to have a separate piece of paper filled out for it and that this is what British scientists are now doing. It should be obvious to any thinking person that this is not the case—as one British scientist now working in the United States put it: "Reading some of the propagandist literature circulated to me recently by the scientific societies of which I am a member, I have had a feeling of unreality about the whole affair, engendered by my inability to recognize, in their descriptions of the restrictions and burdens under which their British colleagues labor, the system under which I worked for so many years; sometimes I have wondered what cloud-cuckoo land they have confused with Great Britain." H.R. 1937 is in no way more demanding than the British act upon whose principles it is based. The record in question would show what the responsible research worker must know if his work is to have any meaning: How many animals, what procedure was used on them, what happened to them? All well-run laboratories have cages or animals or both marked so that they do not get mixed up. H.R. 1937 would require all laboratories that receive Federal funds to come up to proper standards in this respect. I have been in many laboratories where cages are unmarked or have old marking unrelated to their current occupants. In one hospital, I observed dogs whose cages were identified with the name of a doctor who had not used dogs for 2 years.

Another aspect of the so-called redtape which has been attacked are the project plans. Every scientist who gets a grant from the Federal Government has to present his experimental plans in far greater detail than anything called for in H.R. 1937. He has to wait considerable periods before he learns whether his grant has been accepted or not. Unscrupulous opponents of H.R. 1937 have deliberately misled many scientists into believing that the same would hold true with regard to the submission of project plans in this bill. The truth is that the bill was most carefully drawn to prevent any possible delay. Project plans must be prefiled, not preapproved. There can be no delay because the scientist is at liberty to proceed as soon as his plan is on file. Supposing that he later finds a different promising avenue of approach, will his original project plan cover him legally? If there were no difference in the procedures relating to animal suffering, it probably would. If, on the other hand, he decided to change from an experiment involving no pain to one involving pain, he would

clearly have to let the Secretary know of this change. I have some plans as used under the British act if the committee wishes to examine them. As you can see they are brief.

What is the purpose of filing project plans? From the moral standpoint, to encourage the most humane design of experiments. From the practical standpoint, to make possible effective enforcement of the measure without needlessly waisting the time of the scientist or the inspector. If inspectors had to start from a basis of complete ignorance of the experiments being carried on, they would have to ask a great many questions, get corroboration from others, and end up perhaps with a confused report, aggravating to all concerned. But when the inspector has the facts in hand, the project plans clearly in mind, and finds the cages properly marked, he can do an efficient job of inspection within a short time, and, if all is in order, be on his way again.

H.R. 1937 would not in any way hamper humane and responsible scientists. An even stricter law in England has not hampered them. In England the experimental plans must have prior approval from the home office. Under H.R. 1937 the potential delay, which conceivably might occur in our much larger country, has been eliminated by placing the burden on the Secretary to disapprove if he believes the law is being violated, but not to require prior approval.

At the end of the year each licensee would send to the Secretary of Health, Education, and Welfare reprints of his work published during the year and a brief report on the number of animals used, procedures used, and names of coworkers. Thus the previous records are annually confirmed. Here is a sample of the one-page form for the animal report under the British law. As you can see, it is not demanding. No more than half an hour would be required to fill it out.

To conclude the list of basic principles of the bill, it should be noted that it applies to all vertebrate animals. These are the animals whose central nervous system is more or less similar to our own, who have brains and spinal cords and nerves which, among the mammals especially, closely follow the human pattern. It is clearly essential that all these creatures be treated with humane consideration.

I would like to place in the record a letter from Dr. P. L. C. Carrier, recently retired Chief Inspector, carrying out the provisions of the British act of 1876. I hope that we may have a man of equal stature working directly from the Secretary's office, not—and I wish to emphasize this point—from the National Institutes of Health or the Public Health Service, to administer H.R. 1937.

H.R. 1937 is a very moderate bill. It is opposed both by those who say it is too strong and those who say it is too weak. It is not a bill that aims to punish, rather it provides a strong incentive for humane design of experiments and humane care of animals. At present, there is virtually no incentive for scientists to plan experiments humanely—the only one I know is that I mentioned earlier by the American Physiological Society, and it is weak and variable. But if a scientist were aware that his project plan might not be accepted if his planning were needlessly inhumane, he would take the trouble to devise a more humane method. If he knows his license might be suspended or even revoked for failure to comply with the humane requirements of the law he would take the trouble to see that his animals were decently cared for and not abused. Other proponents of this legislation will, do doubt, emphasize the waste of funds that is a concomitant of the irresponsible attitude with respect to animals which is so widely seen in laboratories today, so I will merely point out that while the cost of administering H.R. 1937 would not be great, the amount of taxpayers' funds it would save would be very large indeed. And in saving these funds it would simultaneously be saving something much more important—a thing which it is essential to save if we are to call ourselves civilized—that is needless suffering of animals being used for our benefit to protect us against the sickness and annihilation that we fear.

Mr. ROBERTS. Thank you, Mrs. Stevens.

We appreciate your very fine statement and the exhibits which you have sent up to the committee for its examination. I see that we are running pretty close to the noon hour. I would like to see if I can make some arrangements to proceed with the two witnesses from Great Britain after we resume the hearing this afternoon, which will be at 2 o'clock, and, before we recess, I would like to talk to Dr. Jones to

see if we can make some arrangements to cover the witnesses who are in opposition to the bill.

I want to try to hear from all sides and all segments of this problem. I am going to try to be as fair as I can with the distribution of time.

I think we have made quite a bit of progress this morning in number, quantity, and quality of testimony we have heard.

We do have a large number of witnesses, and the Chair would appreciate any consideration which any witness may give to the committee.

Are there any witnesses who plan to leave the city this afternoon and who might like to file their statements for the record?

If you will hold up your hands, I will be glad to allow you that privilege.

Will you give your name, please?

Mrs. GARDNER. Yes, I am Mrs. Henry Gardner, president of the Montgomery County Humane Society, Montgomery County, Md.

Mr. ROBERTS. It is certainly a pleasure to have you, and you would like to file your statement for the record?

Mrs. GARDNER. Yes, sir; I think that would save time.

Mr. ROBERTS. All right, we are very grateful to you for doing that.

I assure you that your statement will be read and considered by the committee.

Mrs. GARDNER. It is so short it will not be painful.

(The statement referred to is as follows:)

STATEMENT OF MRS. HENRY GARDNER, PRESIDENT, MONTGOMERY COUNTY HUMANE SOCIETY

It is estimated that there are 8 million animals used every year in research in the Metropolitan Washington area. Montgomery County has the largest concentration of test laboratories in this area. This includes National Institutes of Health, Bethesda Naval Hospital Center, and the Maryland Division of Walter Reed Hospital. It is the greatest concern to us that animals used for the fight against disease should be decently housed and treated.

No humane society can check and control the treatment of these animals. Therefore it is the duty of Congres to se that regulatory measures be adopted.

We do not want to interfere with scientific progress and we do not subscribe to the antivivisectionists' theories which are unrealistic and detrimental to both science and humanity.

Our concern is that with so much research being undertaken there is dire need for standards to be set and enforced for the humane care and treatment of the millions of animals, to prevent unnecessary abuse whenever possible.

Mr. STEVENS. May I file also a number of statements given to me by people who are not going to appear, knowing the time is short?

Mr. HUNT. Mr. Chairman, I am from Philadelphia. I will file my statement.

Mr. ROBERTS. Mr. Owen Hunt, president of the American Anti-Vivisection Society of Philadelphia. Your statement will be filed for the record, without objection.

(The statement referred to is as follows:)

STATEMENT OF OWEN B. HUNT, PRESIDENT, THE AMERICAN ANTI-VIVISECTION SOCIETY, PHILADELPHIA, PA.

Mr. Chairman and members of the committee. My name is Owen B. Hunt. I am the president of the American Anti-Vivisection Society, 1903 Chestnut Street, Philadelphia, Pa., and I am appearing before you today in opposition to H.R. 1937 and H.R. 3556, both relating to the humane treatment of laboratory animals.

We learned of this public hearing on the two bills now being considered by this committee only Tuesday, September 25, and we therefore are unable to present to you at this hearing the witnesses and their testimony as to why, in our opinion, this is bad legislation.

The very fact that this committee in the closing days of this session is considering these bills is indicative that the committee is cognizant of the vast amount of cruelty that takes place in the Nation's experimental laboratories. I am appreciative that the committee is aware of this fact, but we in the anti-vivisection movement are united in the firm conviction that neither of these bills would eliminate one iota of the laboratory cruelties.

Mr. Chairman, I am attaching to this brief statement two pieces of literature which set forth in detail why we are certain that neither of these bills will work, with the request that the committee accept them as our testimony.

Vivisection Versus Regulation

(By Owen B. Hunt, president, American Anti-Vivisection Society)

REGULATION IS HARMFUL

For quite some time various groups connected with the humane movement in the United States have been playing around with the idea of curing the evils of vivisection by "regulating" it. This regulation would be brought about through acts of Congress, which would control the health and comfort of animals awaiting vivisection, or having gone through the process. In the actual carrying out of the experiments these laws would (according to their promoters) alleviate the agony of the unfortunate animals by use of anethetics.

But no word is offered in any of these proposed measures which would recognize vivisection for what it is—a wrong and a crime, in itself.

Enactment of these proposals into law would in fact give vivisection a recognition which it has never received before.

The American Anti-Vivisection Society stands, as it always has done, for abolition of vivisection on the ground that it is wrong, cruel, and fruitless.

Two groups of recent origin purporting to be deeply interested in animal humane work, one—the Animal Welfare League of New York, and the other, the Humane Society of the United States, Washington, D.C., have sponsored separate bills and have had them introduced in Congress. Both bills seem to give the impression that if enacted into law, they would alleviate virtually all suffering that animals endure in vivisectional laboratories. Much propaganda in the form of hundreds of thousands of pamphlets and letters advocating the adoption of these bills has been circulated throughout the United States, principally to people interested in animal humane work and in antivivisection work. The public is led to believe that through the enactment of this proposed legislation, only a limited number of animals could be used for experimental purposes, that all animals used for this purpose would have to be anesthetized, and that no pain or suffering would be endured by the animals during the experiments.

THE THREE BILLS

Representative Martha Griffith introduced the bill sponsored by the Animal Welfare League of New York. It is H.R. 1937. A companion bill of exactly similar wording has been presented by Senator Joseph S. Clark of Pennsylvania, in the Senate. It is identified as S. 3088. The bill drafted by the Humane Society of the United States, is sponsored by Representative Morgan Moulder, and is known as H.R. 3556. An analysis of these bills shows clearly the weakness of the contention that pain and cruelty are abolished from the animal laboratories.

The Griffith bill, H.R. 1937, and the Clark bill, S. 3088, state in the opening paragraphs that it is declared to be the policy of the United States that "living vertebrae animals used for scientific experiments and tests shall be spared unnecessary pain and fear; that they shall be used only when no other feasible and satisfactory methods can be used to ascertain biological and scientific information for the cure of disease, alleviation of suffering, prolongation of life, the advancement of physiological knowledge, or for military requirements; and that all such animals shall be comfortably housed, well fed, and humanely handled." This paragraph condones vivisection as necessary, but when we examine the statement on page 1, lines 5, 6, 7, and 8, "that they shall be used only

when no other feasible and satisfactory method can be used to ascertain biological and scientific information for the cure of disease, alleviation of suffering, etc.," places the vivisector in complete control of determining the methods of vivisection. The vivisector is given the right to decide when no other feasible and satisfactory method can be used.

SECRETARY HAS NO AUTHORITY

In sections 2 and 3, the Secretary of Health, Education, and Welfare appears to be in complete charge of compliance with the rules pertaining to the vivisection of animals as described in the act. He is given authority to license the vivisectors, but this is the maximum of his power. He has no power to determine how the experiments shall be performed on the animals. That choice is vested in the vivisector.

On line 17, section 4–C "animals used in any experiment which would result in pain shall be anesthetized so as to prevent the animals feeling the pain during and after the experiment, except to the extent that the use of anesthetics would frustrate the object of the experiment, and in any event, animals which are suffering severe and prolonged pain shall be painlessly killed. Unless the project plan on file with the Secretary specifies a longer period during which animals must be kept alive for the essential purpose of the experiment or test consistent with this act, and the rules and regulations hereunder, animals which are seriously injured as a result of the experiment shall be painlessly killed immediately upon the conclusion of the operation inflicting the injury." When we read this section again, we see the word *except* (the italics are ours), it again gives the vivisector the complete choice as to whether or not anesthesia will be administered to the animals. In each case, the visisector files his plan for the experiment with the Secretary of Health and he outlines the objection to anesthesia and the Secretary of Health has nothing to do but accept the plan as it is presented by the vivisector. The act nowhere gives the Secretary of Health, the law enforcement officer in this act, any authority to dispute the vivisector's word.

PENALTY INCLUDED

All written laws to be effective must include a penalty, and here is the penalty for violations of this proposed legislation. On page 6, line 11, section 8, "the Secretary shall, subject to such terms and conditions as he may specify, suspend or revoke any certificate of compliance issued pursuant to section 3 of this act, or any license issued pursuant to section 5 thereof for failure to comply with any provision of this act, or the policy of the Congress stated herein, upon notice by registered mail to the holder thereof, such notice shall set a time within which the holder may apply for reinstatement pursuant to such procedures as the Secretary may prescribe."

We now see that the penalty for violating the act, should it necessitate a suspension of the licensed operator, must at the time of the suspension include a reinstatement form to be filled in by the culprit, and it must state clearly in this form the time set within which the holder may apply for reinstatement. That means that a vivisector who violated the law and received a suspension can be reinstated the following day after the suspension has been ordered.

Not a single word appears in this proposed act that would designate an appropriation of any sum of money to execute the law.

NOT MUCH DIFFERENCE IN LANGUAGE

The language of the Moulder bill, H.R. 3556, does not differ very much from that of the Griffith bill, H.R. 1937, and the Clark bill, S. 3088. The opening language of this bill states on line 3, "that it is declared to be the policy of the United States that animals used in experiments, tests, the teaching of scientific methods and techniques, and the production of medical and pharmaceutical materials, shall be spared avoidable pain, stress, discomfort, and fear, that they shall be used only when no other feasible and satisfactory method can be used to obtain the necessary scientific information for the cure of disease, alleviation of suffering, prolongation of life, or for military acquirement, that the number of animals used for this purpose shall be reduced as far as possible and that all animals so used shall be comfortably housed, well fed, and humanely treated."

In analyzing the introductory part of the bill, we find it condones vivisection again. Animals shall be spared avoidable pain (it says) ; again, who shall determine what is avoidable pain and what is not avoidable pain? The answer is the vivisector. Further, it states that the animals shall be used only when no other feasible and satisfactory method can be employed to obtain the necessary scientific information. Who is to determine when no other feasible and satisfactory method can be used—again, the vivisector. On page 3, section 3, line 13, it states "there is hereby established in the executive branch of the U.S. Government, an agency for laboratory animal control, hereinafter sometimes called the Agency.

"The Agency shall be headed by a Commissioner of Laboratory Animal Control, who shall be appointed by the President of the United States, with the approval of the Senate, for a period of 5 years, or until such time as the Commissioner shall resign or be incapable of fulfilling his duties, in which event the President shall appoint a new Commissioner for a period of 5 years. To be eligible for appointment as Commissioner, a candidate must have been admitted to practice law in the Supreme Court of the United States. No person who has ever been connected with any laboratory shall be eligible for appointment as Commissioner. The Commissioner shall receive the same remuneration and allowances as the judges of the U.S. Circuit Court of Appeals, and shall not be removable during his term of office save on such grounds as would constitute grounds for impeachment or removal of such a judge. A Commissioner may be reappointed with the consent of the Senate."

MEDICAL LANGUAGE NOT WANTED

The language in this section of the bill virtually prevents any person with medical knowledge from holding the office of Commissioner of Laboratory Animal Control. On page 7, section 12(b), line 22, "animals used in any way that would cause pain shall be anesthetized so as to prevent the animals from feeling pain during or after the experiment, or procedure, unless the project plan approved by the Commissioner states that anesthesia would frustrate the purpose of the project." Here, again, we have the vivisector as the only person to determine whether or not the animals should be anesthetized, and how much anesthesia should be used. We must bear in mind that when the vivisectors tell us that the animals were anesthetized, that they often fail to tell us the depth or amount of anesthesia administered. Too often a small dose of anesthesia would not alleviate total pain and suffering, but the mere use of the word anesthesia leads the public to believe that the animal does not feel pain.

Those of us who read the medical journals continually, know better.

On page 8, section 12(c), "No unasthetized animals shall be burned or scalded or subjected to perforation of the abdominal viscera, or any similarly acutely painful procedure."

This is the one clause in the bill that the proponents are depending upon in their appeal to the public, emphasizing that enactment would eliminate most of the cruelty now practiced in the vivisectional laboratories.

This clause has three major faults. It ratifies vivisection, it makes no provision for enforcement, no funds are appropriated for inspection: Over 15,000 laboratories now receiving Federal aid should be continuously inspected, 24 hours a day. To enforce this clause would require a force of approximately 20,000 inspectors. Yet no provision appears in the bill to finance and provide proper enforcement.

We know from experience in dealing with highly controversial legislation such as these three bills, that were they to be adopted, they would not include anything resembling section 12(c), as quoted above. The axe would fall on section 12(c) long before enactment.

On page 8, line 7, section 12(d) of the bill: "Regardless of the nature or purpose of any experiment or procedure, animals that would suffer prolonged pain or stress as a result an experiment or procedure, shall be painlessly killed immediately after the procedure causing pain or stress is completed, whether or not the objective of the experiment or procedure has been attained." This clause, when scrutinized, still gives the vivisector days and weeks to perform his experiment on animals which is now customary procedure in laboratories, and the animals can be suffering for days and weeks at a time during the experiment before they are destroyed. Therefore, no suffering has been eliminated or alleviated in this bill.

Sections 13, 14, 15, 16, and 17 give the Commissioner the authority and power to suspend the license of the vivisector in the event of a violation, but in all these sections, there isn't one word limiting the power of the Commissioner to reinstate the violator. Therefore, it can be accepted in the absence of anything to the contrary, that the Commissioner has the power to reinstate the violator when he pleases.

NO ENFORCEMENT POSSIBLE

It is estimated there are 10,000 to 15,000 animal laboratories in the United States that would come within the jurisdiction of either of these bills. It would take a minimum of 20,000 people to properly enforce the laws at a cost of approximately $50 million annually, yet both bills are solemnly silent on appropriating any money for the enforcement of the proposed legislation. None of the torture and cruelty now being practiced in animal laboratories would be lessened. But, on the contrary, great damage would have been done to the work of the antivivisection societies throughout the country. Large numbers of people would be fooled and lulled into a sense of false security believing that the animals they love so well were now being properly treated, and that vivisection was virtually abandoned.

On the contrary, these bills would perpetuate vivisection. Unlike other laws presumably relating to cruelty to animals the proposed statutes assume that the bad features connected with vivisection can be regulaed. A trick often used in dealing with highly controversial legislation, is in the course of the bill's progress to cut out possibly good features and unless close attention is paid to these details, the bill can go through after vital portions have been omitted. As a result many of the supporters think that they have go what they wanted and go on supporing the emasculated measures. This gives us still another reason for standing fast for ultimate abolition.

Write to your Congress and U.S. Senator opposing these bills. A postcard will suffice. Simply address them at the House of Representatives, Washington, D.C., or the U.S. Senate, Washington, D.C., and state clearly that you are opposed to H.R. 1937; H.R. 3556; and S. 3088. Ask your Representative of Senator to oppose these bills.

CAN VIVISECTION BE REGULATED?—ENGLAND'S EXPERIENCE SAYS "NO"

ABOLITION IS THE ONLY ANSWER

(By Owen B. Hunt, president, The American Anti-Vivisection Society)

Various methods are being advocated to deal with the evil of vivisection. Some of these proposals relate to legislation—State or Federal. At the present time, possible Federal laws are attracting attention.

The most publicized of these proposed enactments have to do with the regulation of the practice, not the abolition. The chances of adoption of such proposals in the near future are very slight.

Tremendous pressure is usually required to force a law through Congress. Offering of a new bill does not necessarily mean very much. The congressional practice is to refer the bill to the appropriate committee. The committee does not have to do anything about it. Hundreds of bills in every session meet with this fate—they lie in committee until the end of the session and automatically are allowed to die there.

The greatest weakness of bills relating to vivisection, and one that foredooms them, even if they did not contain other deadly flaws, is found in the word, "regulation." They do not condemn vivisection, or treat it as a wrong in itself. By such failure they accept it in principle.

Similar regulation elsewhere has brought about not even reduction in vivisection, but an immense growth over the years. The analysis by several British authorities, which we include in this pamphlet, reflects a long history of attempts at regulation in Britain under the act of Parliament of 1876. They examine the similarity of this English law to the Cooper bill, which was presented in the U.S. Senate at the last session in 1960. A similar bill was offered in the House of Representatives. These bills died with the last Congress but now measures have been introduced in the present Congress.

These criticisms are just as valid when applied to any other regulatory plan. The planners approve vivisection by the very fact of undertaking to regulate it. This leads to a general belief that the evil may possibly have existed at one time, but has now been corrected by law.

Ordinarily, only an infinitesimal proportion of the population has any direct knowledge of vivisection. Most of them consider these practices as going on in places and surroundings remote from the ordinary experiences of daily life. The result is that if there is general belief that a law exists putting a curb on these experiments, people will think the matter has been properly dealt with.

Let us heed rather the experience of those who have seen the actual results of such alleged regulation over a long period of years. This experience has amply demonstrated that abolition, not regulation, is the only answer.

The Menace of Bill S. 3570

(By M. Beddow Bayly, M.R.C.S., L.R.C.P.)

"A bill to provide for the humane treatment of animals used in experiments and tests by recipients of grants from the United States and by agencies and instrumentalities of the U.S. Government, and for other purposes."

There are clearly demonstrable reasons why this bill must fail of its object and should, therefore, be strenuously fought by all interested in animal welfare and opposed to the infliction of pain and suffering in the course of scientific research.

Let it first be granted that the sponsors of the bill, who are for the most part concerned with animal welfare but not opposed to vivisection, are genuinely convinced that this enactment would appreciably reduce the amount of suffering endured by the animals experimented upon in the laboratories. In the following pages it will be proved to the reader that their efforts, however well-intentioned, are gravely misguided.

At the outset, we are faced with the anomaly that the bill is hotly criticized both by supporters and by opponents of experiments on animals, the sponsors of the bill receiving a measure of abuse from both sides. So let us examine the validity or otherwise of the conflicting arguments.

(1) The NSMR (National Society for Medical Research) and similar groups, claim that, if enacted, the provisions of the bill would seriously impede the progress of medical science. There is not a vestige of truth in this. Years ago the legal adviser to the American Medical Association, Mr. John F. Sembower, LL.B., when discussing the British Cruelty to Animals Act, 1876, stated categorically that "all types of animal experimentation performed in the United States may be conducted in England," the obvious inference being that the British act presented no obstacle to the work of British scientists. Since bill S. 3570 is very largely patterned upon the provisions of the act of 1876, it follows that the former will have no more effect upon Americans than the latter has had upon British research. In point of fact, the provisions of bill S. 3570 are, as we shall see later, considerably less strict, in some respects, than those of the British act.

STATEMENT OF PHYSIOLOGIST

On this side of the Atlantic, we have the statement of a physiologist of University College Medical School who is licensed under the 1876 act, Mrs. Grace Eggleton,[1] that "the restrictions imposed by the Home Office are highly desirable, for they afford the protection of the law against interference from the antivivisectionists. They offer no hindrance to research. * * *" This claim would receive the assent of most physiologists in Great Britain.[2] Together with similar declarations emanating from responsible authorities in America, it makes nonsense of the arguments of the NSMR.

(2) The main objection to the bill on the part of opponents of vivisection is that its provisions do nothing to prevent any of the pain, misery, and suffering which are the inevitable accompaniment of many scientific experiments—that which is termed by the scientist as unavoidable and therefore justifiable. It is certainly often unavoidable if the experiment is to be conducted to its planned end (the solution of some problem) and under conditions which do not invalidate the results; but antivivisectionists demur from the inference that this renders the experiments justifiable.

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[1] British Medical Journal, Nov. 19, 1949, p. 1174.

[2] It was endorsed by Dr. P. L. C. Carrier, chief inspector of the Home Office when speaking at a meeting of the Animal Care Panel held in Washington, Oct. 29–31, 1959. (See Information Report, vol. 8, No. 5) Animal Welfare Institute, New York, U.S.A. He said: "The act does not interfere with the progress of science."

All that the bill could accomplish, if enacted, would be (1) the elimination of that type of suffering which is connected with the housing and general treatment of the animals before and after they have undergone experimentation, and (2) the provision of an anaesthetic during painful operational procedures when this would not interfere with the validity of the result.

AVOIDABLE SUFFERING

At this point one may well stop to consider what the very presentation of this bill to the Senate implies—nay, positively proves. It provides a clear, if disconcerting and even shocking admission that in the scientific research laboratories throughout the States there has been, and still is at the present time, a vast amount of avoidable and therefore needless suffering on the part of experimental animals which is solely due to what the Washington Post (June 6, 1960) described as the "carelessness, callousness, ignorance, and wanton neglect" evinced by the persons and authorities whose responsibility includes the proper care of the animals while under experiment.

The sponsors of the bill must have accumulated unchallengeable evidence of the widespread nature of this abuse. No one would be so foolish as to propose legislation against an abuse that did not exist, especially when to press for such legislation is to court unpopularity and invite the most bitter criticism from powerful interests and scientific authorities.

In establishing this long-contested charge as a fact the sponsors of the bill have earned the gratitude of those who desire to expose the whole shameful setup of animal experimentation to the public gaze and seek, as the only practical solution to the problem, the total abolition of a practice which in so many instances involves the infliction of an amount and degree of pain, misery, or suffering which defies computation and beggars description.

PAIN AND SUFFERING

It will be useful at this point to give brief details of the sort of experiments—involving pain and suffering—which have been legally performed within fairly recent years under the provisions of the British 1876 act and which would still be permissible under the restrictions set out in bill S. 3570.

1. Acute intestinal obstruction (in dogs). This involved tying-off (under anaesthesia) different portions of the intestinal canal with tapes so that nothing could pass through the body. On recovery from the anaesthetic, the animals were kept under observation, fed through a catheter inserted in the intestinal canal below the obstruction, and in some cases deprived of all but an occasional sip of water. This continued for several weeks until the animals died from peritonitis or some other acute condition which must have caused considerable suffering.

2. Testing the value of analgesic drugs in mitigating the pain of extreme heat by placing rats on plates made of metal and heated to a temperature of 60° to 70° Centigrade and noting their behavior (reaction to pain) before and after the administration of the drug. It is to be noted that the temperture of 60° Centigrade is that commonly used for producing a standard experimental burn on an animal with a heated iron applied for 1 minute.

3. The application of drops of caustic poison gas (Lewisite) into the eyes of rabbits, producing various degrees of pain, acute inflammation of the eye, perforation of the cornea and eventual destruction of the whole eyeball, no anaesthetic being given at any stage of the experiment.

4. Subjection of many types of animals to poison gases, such as phosgene, in glass-fronted observation chambers or on the open field, no anesthetic being given throughout the experiment.

SEVERE BURNS

5. The infliction of severe burns on the bodies of animals, sometimes covering large areas, by means of hot irons or scalding water, or the application of phosphorus or similar chemical. After recovery from anesthesia, keeping under observation for indefinite periods while sepsis developed or some form of treatment was applied.

6. Other procedures, including the prevention of sleep; deprivation of food or water; subjection to repeated drowning and resuscitation; the injection of septic material or toxic drugs into muscles, organs, brains, or nervous system; the production of severe shock by high explosives, by blows on the limbs with a

mallet, or by means of a tourniquet, the animal being allowed to recover from the anesthetic and to live under observation for long periods or until death.

The foregoing instances could be multiplied many times over,[3] but should be sufficient to indicate how ineffective the British Cruelty to Animals Act of 1876 has proved in preventing severe suffering in animals under experiment. The American bill, based upon similar principles, would be equally futile.

It will now be well to compare more precisely bill S. 3570 with the British act of 1876, in order that we may evaluate correctly the provisions of the former. In the first place, it may be pointed out, in confirmation of what has already been said, that the bill, in its opening sentences, refers to its being "the declared policy of the United States that living vertebrate animals used for scientific experiments and tests shall be spared *unnecessary* pain and fear." (My italics, M.B.B.) In the British act there is no mention of the terms "unnecessary" or "avoidable" suffering. This may be explained by the fact that in Great Britain scientists have always assumed, and maintained, that all of those conditions such as ordinary care and comfort, proper food and quarters, were automatically observed[4]—not primarily for humanitarian reasons, but because their lack would invalidate the results of their investigations. As Mrs. Grace Eggleton, the physiologist and licensed vivisector already quoted,[5] declared: "little of physiological value could be obtained from experiments on animals in acute emotional distress." No responsible scientist would dispute this, yet the principle it embodies appears to be ignored and positively flouted by American research workers. If this were not so, we should not have had our sensibilities shocked by the disclosure that hundreds of beagles undergoing tests of drugs and chemical additives to their diet were housed in small cages without exercise or daylight for periods up to 3 years by the Food and Drug Administration.[6]

LICENSES AND CERTIFICATES

In Britain, licenses, with their accompanying certificates to exempt the experimenter from the main provisions of the act, are granted by the Home Secretary, and application for them has to be endorsed by a president of one of the royal societies or of the royal colleges as well as by a professor in a university—usually a physiologist. But under the bill S. 3570 the whole procedure is vested in the Secretary of the Department of Health and Education who has sole power to accept or reject an applicant for a license. No provision is made for any control by medical or scientific authorities. This in itself is a most obnoxious state of affairs.

ANESTHETICS

In bill S. 3570 (sec. 4) it is laid down that in any experiment which could result in pain the animal must be anesthetized so that the pain shall be prevented from being felt either during or after[7] the experiment, with the proviso that exceptions may be made if the use of anesthetics would frustrate the object of the experiment. Any animal suffering severe and prolonged pain shall be painlessly killed.

Under the British act of 1876 there is a similar provision regarding the use of anesthetics; it is also stipulated that the animal shall be killed before recovery from the anesthetic. But both these restrictions can be removed by obtaining the appropriate certificate from the Home Secretary. It is also laid down in a pain clause of the regulations that an animal suffering severe and prolonged pain shall be painlessly destroyed. In both the American bill and the British act it is clear that provision is made for legally keeping an animal alive in severe pain that is not likely to endure or in prolonged pain that is not severe. In the British act there is an additional stipulation which, no doubt, impresses the uninstructed, that, after the main object of the experiment has been attained, the animal must be put out of its misery if the pain is either severe or likely to endure. How meaningless and futile these pain conditions are now

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[3] For further examples see "Vivisection Under the Cruelty to Animals Act, 1876," published by the NAVS, 21, Palace Street, London SW. 1. (Price, 6 pence.)

[4] Mrs. Christine Stevens, a sponsor of the American bill, has herself admitted that her personal experience when visiting laboratories in both countries convinced her that animals are better treated in British laboratories than in the United States.

[5] British Medical Journal, Nov. 19, 1949, p. 1174.

[6] See Information Report (Animal Welfare Institute, New York, vol. 9, No. 1, 1960.

[7] How this could be implemented during the often long periods of observation which follow the initial operation or injury is not made clear.

in Great Britain and will be in America if the bill becomes law is readily grasped directly one realizes the fact that no one has defined, or can define, what is to be understood by the terms "severe" and "prolonged," or "likely to endure." In practice this decision is left entirely to the discretion of the experimenter who is solely concerned with the success of his investigation. He is also allowed to decide at what point the main result of the experiment has been attained. It is to be noted that even the most well intentioned research worker is faced with the difficulty of determining if an animal is in pain or not. As is truly stated [8] in the March 1960 issue of the Proceedings of the Animal Care Panel: "The detection of pain in the dog is often quite difficult. This, unfortunately, has led many people to assume that pain is not present postoperatively. There may be some truth to the impression that the dog possesses a higher pain threshold or can endure more pain before showing evidence of discomfort."

VIVISECTION BY STUDENTS

In section 4 of the American bill it is laid down that all experiments involving pain shall be conducted by licensed persons or by students in an established training school who are under the direct supervision of a licensee. In the latter case the animal must be killed before recovering consciousness, if it has been used for practice surgery or similar painful procedure.

In Great Britian there is no provision whatsoever for the performance of experiments on living animals for students, even under supervision. Physiological experiments are performed by them on pithed or decerebrate animals which are, in consequence, incapable of sensation and are considered virtually dead. The American bill will do nothing to curb the widespread and increasing use of animals (especially dogs) for the purpose of gaining skill in surgical operations.

Under the British law it is illegal for even a trained, qualified scientist to practice on an animal for the acquirement of skill. There is no avoiding this restriction. Yet, in spite of this prohibition, Sir W. Heneage Ogilvie,[9] consulting surgeon, Guys Hospital and Royal Masonic Hospital, was moved a few years back to declare: "British surgery has always stood high because it can be claimed, and not without reason, that every surgical advance of major importance has come from this country."

LOOPHOLE

There is no corresponding provision in bill S. 3570 and this omission provides a loophole which opens the way to untold animal suffering. Reliance upon skill obtained through experience in animals is likely to prove, as it has in the past, misleading when the qualified surgeon comes to deal with human patients. This, in its turn, will lead to human suffering: for it is not long since that Dr. Paul R. Hawley, director of the American College of Surgeons, is reported [10] to have stated: "It is reliably estimated that today one-half of the surgical operations in the United States are performed by doctors who are untrained or inadequately trained to undertake surgery." One of the most distinguished surgeons in the work told him, he said, that at least half his current practice "consists of attempts to correct the bad results of surgery * * * by doctors inadequately trained in this field." But there can be no doubt but that they were well trained in dog surgery. Thus does one evil lead to another.

UNAUTHORIZED VIVISECTION

One most unfortunate and glaring omission in the American bill is that there is nothing to prevent the use of animals in so-called research by young students, and even by schoolchildren in the cellars, attics, or bedrooms of their own homes, whether such investigations, admittedly immature, crule, and useless, be carried out overtly or clandestinely. This type of research, deplored by many educationalists and condemned by scientists, is left untouched, since the bill only seeks to control, and is only concerned with, persons and institutions which function under a grant from the U.S. Government.

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[8] Article entitled "Preoperative and Postoperative Care of the Laboratory Dog," by Dr. N. Bleicher. Quoted in Information Report of the Animal Welfare Institute, New York, March–April 1960 (vol. 9, No. 2, p. 3).

[9] British Medical Journal, Dec. 18, 1954, p. 1438.

[10] Time, June 8, 1959.

A MOST IMPORTANT DIFFERENCE

It cannot be repeated too often or emphasized too strongly that in Great Britain it is illegal and an offense punishable by fine or imprisonment for any person, save one licensed by the Home Secretary under the Cruelty to Animals Act of 1876, to perform any experiment on a living animal calculated to give pain.

INSPECTION OF PREMISES

Section 4 of the bill S. 3570 authorizes the Secretary to inspect the animals and premises together with the books and records kept. Nothing is said as to the number or qualifications of the representatives he may send for this purpose; but if in the United States the British administration is taken as a pattern and as few as five inspectors (who may themselves be ex-vivisectors) appointed to supervise hundreds of laboratories and millions of experiments, the benefit to the animals is likely to be as barren and futile as it has proved to be in Britain.

KEEPING OF RECORDS

Clauses regulating the keeping of records, the submission of plans of work, and of reports of the results of investigations appear to be very similar in both documents and there is little worth noting here.

PENALTIES

One important difference concerns the penalties which may be inflicted for infringement of the regulations. In the American bill there is no penalty for contravening the terms of his certificate by any licensee save the suspension or revocation of the certificate, and it seems clear that the authorities in sympathy with vivisection as a method of research constitute themselves as sole administrators in control of the due and proper working of the contemplated enactment.

A person whose certificate of compliance has been suspended or revoked may be reinstated at the discretion of the Secretary.

Under the British act of 1876 offenders may be prosecuted (and penalties recovered) before a court of summary jurisdiction. Subject to appeal to a higher court, they may be fined, or, in default of payment of the fine, liable to imprisonment. To quote the act (clause 2): "Any person performing or taking part in performing any experiment calculated to give pain, in contravention of this act, shall be guilty of an offense against this act, and shall, if it be the first offense be liable to a penalty not exceeding £50, and if it be the second or any subsequent offense, be liable, at the discretion of the court by which he is tried, to a penalty not exceeding £100 or to imprisonment for a period not exceeding 3 months." Any such prosecution, however, must be instituted within 6 months of the occurrence of the alleged offense.[11] Another proviso which considerably weakens the scope of this clause in the act of 1876 runs as follows: "A prosecution under this act against a licensed person shall not be instituted except with the assent in writing of the Secretary of State" (Home Office). Procedure varies somewhat according to whether the offense be committed in England, Scotland, or Ireland.

FURTHER DIFFERENCES

There remain to be described certain restrictions in the British act which find no place in bill S. 3570. Under the act of 1876—

(1) Any exhibition to the general public, whether admitted on payment of money or gratuitously, of experiments on living animals calculated to give pain shall be illegal. Penalties for infringing this law are heavy—a penalty not exceeding £50 for a first offense, and for a second or subsequent offense a penalty not exceeding £100 or imprisonment for a period not exceeding 3 months.

(2) "The substance known as urari or curare shall not for the purpose of this act be deemed to be an anesthetic." This is a grave omission from the bill for it permits the use in the most painful experiments of a drug which paralyzes movement but does not diminish sensation.

(3) The complete prohibition of experiments for the attaining of surgical manual skill has already been dealt with.

These three restrictions are inescapable and absolute. There are no certificates of exemption provided for in the act.

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[11] See Report of Royal Commission on Vivisection (1912), p. 5.

(4) Dogs, cats, horses, asses, and mules shall not be used, unless there are special reasons why they are the only animals suitable, and then supplementary certificates must be applied for and obtained by the licensee.

A SERIOUS DANGER

We have left to the last mention of a very serious danger to the cause of those who seek the entire abolition of the practice of vivisection; namely, the danger that the very existence of such an enactment, totally unsatisfactory as it is from this point of view, will be used to deceive people into believing that now that there is a law to regulate and control experiments on animals, there can be no suffering, pain, or misery inflicted on them—"It just isn't allowed; why the act itself states that its purpose is to provide for the humane treatment of animals used in experiments and tests," it will be confidently claimed.

As we have seen, the so-called restrictions of the British act of 1876 permit the infliction of the most horrible suffering.[12] Yet the Research Defence Society, which holds much the same position in Great Britain as the NSMR in America, declared officially [13] not so long ago in regard to vivisection: "Such use of animals in British laboratories is strictly controlled by act of Parliament and involves no cruelty whatsoever in spite of the allegations to the contrary made by those who would like to bring this sort of medical research to an end." The same danger applies to bill S. 3570 and the reader may be startled if not shocked to learn that similar assertions, equally false and unwarranted, have already been made, even though the bill has only recently (May 18, 1960) been introduced into the Senate. For, in a debate [14] in a television program (WFLA–TV) on May 29, in which Mr. Clarence Richard, managing director of the National Anti-Vivisection Society, of Chicago, joined issue with two doctors—one a medical man and the other a veterinarian—the physician, Dr. David Baumann, director of postgraduate training at Tampa General Hospital, had the temerity to declare: "However, because it has been realized that in some remote parts of research there has been some cruelty to animals in the past, there is now a Federal law which is required for all animals, for all laboratories who undertake animal research under Federal grant. This law demands that all animals be completely anesthetized."

It would be difficult to discover a similar instance of downright falsehood except in the official pronouncements and publications of the defenders of vivisection. This facility for the perversion of the truth has been a feature of the provivisection campaign throughout its history and is much to be deplored. Dr. David Baumann also suggested that the experiments described by Mr. Richard happened a long time ago and were performed by unqualified scientists. Well, the reader knows how much credence to give to this since in the foregoing pages he has read authentic accounts of painful experiments performed by licensed scientists within recent years under the terms of the British Cruelty to Animals Act of 1876. Every one of these would be permissible under the provisions of bill S. 3570.

Such, then, is a brief, but the writer hopes, clear and adequate account of the provisions of the American bill S. 3570 as compared with those of the British Cruelty to Animals Act of 1876 upon which, all are agreed, the American bill is largely based. The writer does not claim to be impartial in his approach to the subject under discussion—on the contrary, he is an avowed opponent of the whole practice of vivisection. But he is confident that the reader will find in the foregoing pages a description of the implications and deficiencies of the American bill which is both accurate in fact and fair as to comment.

VIVISECTION IS FUNDAMENTALLY EVIL

(By Wilfred Risdon, Secretary of the National Anti-Vivisection Society of Great Britain)

It is certainly a fundamental fact that if a thing is evil it does not become beautiful by putting a new frock on it or by wrapping it up in pretty wrapping

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[12] See "Vivisection Under the Cruelty to Animals Act, 1876," published by the National Anti-Vivisection Society, 27, Palace Street, London SW. 1 (price 6 pence).

[13] Conquest Pamphlet, No. 1, October 1956 (p. 1), published by the Research Defence Society, 11, Chandos Street, London, W. 1 (price 3 pence).

[14] The words in quotes are transcribed verbatim from the official tape recording of the telecast. Copies of this tape will be available for loan to any society or individual who can interest any group in listening to it. Inquiries should be addressed to the NAVS, 100 East Ohio Street, Chicago 11, Ill., U.S.A.

paper. If it is evil, it is fundamentally evil, and the thing to do with something that is fundamentally evil is to fight it uncompromisingly until you have strangled it out of existence. That is our attitude to vivisection. We view it as an evil, an evil which must be fought and which must be driven out of existence.

Now, we have from time to time had the English language enriched by words added to it from across the Atlantic, and there is one which comes to my mind at the present moment which seems to sum up this American bill very effectively—"ballyhoo." And it does, indeed, sum up the whole intent, as I see it, of the American bill. It is ballyhoo; it is to bamboozle the public and to kid them into believing that something effective is now being done to harness an evil and to make for humane treatment of animals.

We have our own problems in this country and I am firmly convinced that many of our problems have been made more difficult owing to the number of people who believe that something controlled by act of Parliament cannot be completely cruel—a misguided belief on their part, but a sincerely held belief. We come up against it all the time with well-intentioned people who say "We think you must be exaggerating because, after all, vivisection in this country is controlled by act of Parliament and therefore there should be no cruelty." We have then to point out to them that the people who determine the degree of protection for the animals are the very people who are themselves indulging in the practice of vivisection which causes the suffering to the animals; and to be judge and jury in one's own case and to give oneself acquittal is not consistent with English standards of justice, at least.

SPECIOUS ARGUMENTS

Now, we have had similar cases in the past: specious arguments, the old selfish arguments, come up from time to time—that this is necessary for human welfare. We learn so much for human medicine by these practices; and that seems to give them sanction for all these atrocities which they perpetrate on our fellow creatures, which are often referred to as "the lower creation." Heaven help us if we consider ourselves to be the higher creation, so long as we can do such things. We have had, in the past, the same arguments applied to slavery. We were told that slavery was necessary for the preservation of the plantations in the South; no other labor could do the same work that the slave labor could, and therefore the slaves must not be emancipated. But eventually they were emancipated, and the plantations all continued, and thrived and flourished pretty successfully, as one can see when one considers the millionaire fortunes of our tobacco kings.

We in this country had the same argument applied to child labor and slave labor and, owing to the activities of such pioneers as Lord Shaftesbury, also a pioneer in the fight against vivisection, child labor in the factories and mines was abolished in this country, and the factories did not go bankrupt, and the mines did not go out of existence because they could not get child labor. They just went on flourishing.

And the same is true of medicine. If we can abolish this vicious practice, which so often proves to be misleading, I am quite sure that we shall get more accurate information about the treatment of human diseases and human ailments than ever we can get in this way. Let us develop the infinitely great lines of research that are concerned with clinical investigation, investigation of what happens to human beings who are suffering from disease, and learn from them, from the accumulation of knowledge of successful treatment as compared with unsuccessful treatment. There you have the sort of remedy that can make for human health, together with a better way of living that avoids the causes of illness. There is our case and there are our lines of territory. And all these arguments for the old vicious system to go on because it is necessary and because it is harmless as long as it is controlled are fallacious, misleading, and can lead only to damnation.

THE SCANDAL OF VIVISECTION

(By Harvey Metcalfe, Secretary of the Scottish Society for the Prevention of Vivisection)

If I read this bill properly, it appears that, if it becomes law, not only can a licensee do the experiment, but he can authorize medical students to do it, possibly first-year students, and the only penalty seems to be the loss of the license—and then it can be reinstated.

The subject of anesthesia is mentioned in this bill. Some of us have seen suffering under the act. Miss Lind-af-Hageby has seen a great deal, and I have seen a great deal, in many laboratories. I won't say more than that. But this act of ours does protect the vivisector and not the animals, and I am quite sure that it may be even worse in the United States.

Not so very long ago, when I addressed the annual general meeting of the National Anti-Vivisection Society, there was sitting in the audience the Honorable Juliette Gardener, the granddaughter of the man who introduced our act of Parliament. That act had been brought in with the best of intentions, and it has, I think, been indicated that the way to Hades is really paved with good intentions. and it most certainly is in this case.

What troubles me about the introduction of this bill is that it coincides with the official and costly move by the U.S. Government to establish—they have established it—a monkey farm of 163 acres near Portland, Oreg. Two million dollars have already been voted for it, and there is another request for $2 million. Five more farms are planned, and each one is to cost $2 million. These are scheduled as national primate centers. They will be different from the usual animal laboratories in the sense that guest vivisectors will visit them, and Dr. Donald Pickering, of the Oregon Medical School, says "It is expected that visiting researchers will flock to these centers." We do not doubt his words.

PUBLIC HEALTH SERVICES

The Public Health Service, a branch of the U.S. Department of Health, Education, and Welfare, will run these monkey centers, and, at this late hour, Dr. Karl Meyer, the Chairman of a Federal Advisory Committee on Primates, says, "Medical men and others expect to discover which primates most closely resemble man for specific tests."

The Wall Street Journal points out that the U.S. researchers started intensive work years ago, but it is Russia, that has forged ahead. It is almost an international fight over the bodies of these creatures; and I think we must be international in outlook. Science is international and we antivivisections must be.

I have here a copy of the speech made by the founder of the American SPCA at their annual general meeting in 1881. He said this:

"It has been suggested that it would be more wise to ask for a modification of the system of vivisection, rather than its unqualified abolition. Vivisection, like murder or arson, is either right or wrong. If it is right to torture a sentient being to death, by all the methods that science and art can devise, then it is wrong to restrict that right: if it be wrong, it follows that instantaneous and uncompromising finality should be insisted on * * * if civilization be not a myth, and mercy not a mockery, then the demoralizing, bloody and remorseless crimes inflicted on one-half of God's animated creatures should meet with prompt and eternal condmenation and end * * *. So long as physical power and constitutional right shall remain to me, I shall continue to plead in my own humble way the termination of these wrongs against nature, against reason, and against the public conscience of America."

Mr. ROBERTS. Are there others?

The committee willl stand adjourned until 2 p.m. this afternoon.

(Whereupon, at 12:20 p.m., the hearing was adjourned, to reconvene at 2 p.m. of the same day.)

AFTERNOON SESSION

Mr. ROBERTS. The subcommittee will please come to order.

Mrs. Stevens, would you like to introduce the two witnesses, Prof. A. N. Worden, director of the Huntingdon Research Center, Huntingdon, England; and I believe Maj. C. W. Hume, secretary general, the Universities Federation for Animal Welfare, London, and I believe they will make separate appearances.

Mrs. STEVENS. Yes.

Mr. ROBERTS. Would you like to introduce Professor Worden or Major Hume at this time? We would be glad to have either of them.

STATEMENT OF CHRISTINE STEVENS—Resumed

Mrs. STEVENS. Professor Worden, as you have stated, is the director of the Huntingdon Research Center. He is a biochemist and a veterinarian and a pharmacologist. He is coeditor of the "Handbook on the Care and Management of Laboratory Animals," which I submitted to the committee this morning, which is the well-known text, the very best one on this subject.

Professor Worden is also the editor in chief of the scientific journal, Animal Behaviour, which is Anglo-American; it operates on both sides of the Atlantic.

Should I also introduce Major Hume now, or just one at a time?

Mr. ROBERTS. I believe just one at a time will be fine.

We will have the pleasure now of hearing from Prof. A. N. Worden.

The Chair would like to say that we are very grateful to you for coming. We know that you have traveled many miles, and probably in some bad weather, too, to be here, and we are certainly appreciative of your fine work in your own country. And we appreciate the efforts you have made to be here and give us the benefit of your testimony. We are very grateful to you.

STATEMENT OF PROF. A. N. WORDEN, DIRECTOR, HUNTINGDON RESEARCH CENTER, HUNTINGDON, ENGLAND

Mr. WORDEN. Thank you, Mr. Chairman and members of the committee.

Mrs. Stevens has dealt with some of my credentials. At the present time I have responsibility for a group of research workers in England, including physicians, veterinarians, pharmacologists, toxicologists and others, all holding licenses under the Cruelty to Animals Act. I am a member of the Physiological Society, the Pathological Society of Great Britain and Ireland, the Nutrition Society, and many other learned bodies. In the United States, I am a charter member of the Society of Toxicology, a diplomate of the Board of Laboratory Animal Medicine, and a member of the American Society for Animal Production, the American Veterinary Medical Association and the Animal Care Panel.

I am joint editor of the "Handbook on the Care and Management of Laboratory Animals," and editor in chief of the Anglo-American scientific journal, Animal Behaviour, while I have published some 50 original scientific papers that relate to experiments on living animals. I am grateful for the privilege of appearing before you today.

This is the fourth time within the past 2 years that I have had the pleasure of coming to the United States of America. On previous visits I have had the opportunity of seeing experimental animals in over 40 laboratories in 9 States, some of these laboratories on several occasions. Such laboratories include those of Government institutions, nonprofitmaking bodies, independent organizations, and pharmaceutical concerns. I have, in addition had many discussions with American research workers, here and in the United Kingdom and elsewhere, and I would agree with the contention that there has been considerable misunderstanding of the privileges and rights of individual research workers in the United Kingdom under the Cruelty to Animals Act.

I have held a license and certificates under the Cruelty to Animals Act for 24 years, first when at the Lister Institute of Preventive Medicine in London, then at the Universities of Cambridge and Wales, and currently at the Huntingdon Research Center. At the University of Wales I was head of a university department concerned primarily with research and my present post likewise involves responsibility for direction of research workers of different disciplines. Since 1945 I have therefore had to assume responsibility to the Home Office for licensed premises as well as for an individual license.

Throughout this period I have found the authorities to be constructive and helpful and at no time has any reasonable request been refused. The premises have been subject to inspection and licenses and their accompanying certificates have been obtained for a variety of persons engaged in research, ranging from medical graduates to animal technicians. I have found that an application to hold a license is subject to careful scrutiny, often including a detailed telephone inquiry from the Home Office, but never to unreasonable refusal. The head of the department or laboratory is expected to use his discretion in this as in other ways, and to insure the adequacy of his premises and working conditions, including animal quarters.

In my experience the visits from the Home Office inspector, who is medically qualified, provide the opportunity for a useful exchange of information. There appears to be considerable misunderstanding of the way in which British research workers have been able to complete their applications under the Cruelty to Animals Act. The application made by the individual research worker in the United Kingdom does not in practice limit a responsible experimental approach, at least in the experience of my colleagues and myself. Provided that he observes the humane standards of experimentation required, he may modify his protocol and the numbers of animals involved to suit the research program.

Only if exceptional pain is anticipated is it required to furnish precise details in advance. The Home Secretary has, of course, wide powers, but in practice the research worker and the head of the organization in which he is working are expected to conform to the general requirements of the act and are left unmolested. The records that have been returned are but a fragment of those that any trained research worker will keep anyway. The so-called redtape associated with the application and records is very slight indeed, and does not intrude upon the worker's time nor into his research, provided of course that he obeys the act.

The application made by the individual research worker in the United Kingdom does not, in practice, limit a responsible experimental approach, at least in the experience of my colleagues and myself. Provided that he observes the humane standards of experimentation required, he may modify his protocol and the numbers of animals involved to suit the research program. The Home Secretary has, of course, wide powers, but in practice the research worker and the head of the organization in which he is working are expected to conform to the general requirements of the act and are left unmolested.

The research worker must, of course, keep proper records, which are open to inspection and which are summarized for filing with the Home Office at the end of each calendar year. Despite misconceptions

to the contrary, there is no limitation within the United Kingdom as to the vertebrate species that may be employed for experimental purposes. Those who wish to work with either dogs and cats or with equidae must obtain a certificate to enable them to do so, but this has never in my experience been unreasonably refused.

It might be helpful to mention that in my own laboratory we have accommodation for some 10,000 mammals and birds, including not only dogs and cats and all the usual laboratory rodents, but also the larger domestic animals such as pigs, cattle, sheep, and a variety of birds. Among those who hold a license to conduct experiments in my laboratory is a local surgeon for whose work we receive a grant from the East Anglian Regional Hospital Board to enable him to undertake experimental surgery in dogs related to his clinical surgery in man.

At the present time we are undertaking many experiments relating to teratogenic activity and to the testing of drugs for other effects. Our routine work involves indeed the routine or specialized toxicity testing not only of drugs but also of cosmetics, food additives and coloring matters, packaging materials, pesticides and herbicides, and other substances that might cause an environmental hazard, including carcinogenicity, skin sensitization and absorption, and inhalation toxicity. Many of our studies relate to materials that are to form the subject of petition to the U.S. Food and Drug Administration, and in these instances the relevant programs have been discussed in detail in advance with the Division of Pharmacology of the Food and Drug Administration here in Washington. In none of the programs among these categories has there been any restriction on account of the provisions or enforcement of the Cruelty to Animals Act.

It may perhaps be inquired whether, in view of the lack of restrictions of which I have spoken, the Cruelty to Animals Act does in fact confer any benefits upon animals themselves. The answer must be in the affirmative. British research workers are charged to adopt all reasonable humane precautions, including the need to stop any painful procedure once the result of an experiment has been obtained and to destroy painlessly any animal found to be suffering severe pain which is likely to endure.

So far as I am aware, neither I nor any of my colleagues has ever felt that this has handicapped research. Again, although the act does not deal specifically with animal quarters, in practice the Home Office inspectors insist that these must be adequate, and advances in laboratory animal husbandry and accommodation are, therefore, assisted indirectly by the inspections made under the act. In my experience all research workers of experience, certainly those who are concerned with long-term experiments, are convinced that healthy and contented animals are indispensable to reliable results. They, therefore, welcome any improvements that can be suggested.

It must not be overlooked that the Cruelty to Animals Act protects not only the animal but, in a different sense, the research worker. It follows from my present position that I am categorically opposed to those who would deprive us of the right to undertake experiments on living animals, the so-called antivivisectionists. These people are vociferous in my country, as in yours, and we consider that the Cruelty to Animals Act helps us to reassure the general public that

their allegations of uncritical and even sadistic experimentation are ill-founded. We believe also that the existence of the act is of value in dealing with parliamentary questions. I believe that among experienced British research workers the vast majority would, on material consideration, favor the retention of our act.

Many of us believe that it could well be brought up to date and recently I have had the privilege of personal discussions with our Under Secretary of State, Home Office, on ways in which this might be attempted. I am strongly of the opinion, however, that animals and research workers would both lose if the act were deleted from the statute book. I believe also that prior care in experimental planning and avoidance of indescriminate and wasteful usage, are as important with animals as with other laboratory reagents. The freedom of all and sundry to use animals indiscriminately would not in my opinion improve either the quality or the value of British research.

It would I feel be discourteous to attempt comment either upon the provisions of bill H.R. 1837 or upon the general principal of whether or not legislation found to be satisfactory in the United Kingdom would prove acceptable in this country. As already indicated, I have been able to see American laboratories at will. The high opinion in which I hold individual research workers over here is reflected in the fact that I have successfully sought their collaboration in preparing a standard textbook on the care and management of laboratory animals, edited by Dr. William Lane-Petter of our Medical Research Council and myself and sponsored by the Universities Federation for Animal Welfare.

My colleagues and I are contributing also to texts that are being produced in this country. If I were asked to give a frank opinion, however, I should be forced to agree with the contention that there does exist a wide difference in this country between the best and the worst of animal quarters, animal caretakers, and experimental facilities. Improvements are being urged by many persons, not least by those who are actively engaged upon research.

Thank you very much for permitting me to appear before you and for listening to me.

Mr. ROBERTS. Thank you very much. I certainly appreciate the restraint which you use in expressing your opinion on the bill before Congress.

But I do feel that you certainly keep in mind the experience that has been had in the United Kingdom with this type of legislation.

I wanted to note that you have engaged in some cooperative work with our Food and Drug Administration. I believe you stated that some programs have been discussed in detail in advance with the Division of Pharmacology, Food and Drug Administration, here in Washington. I would like to inquire a little bit about that type of cooperation, how it came about, and what were some of the results of that work.

Mr. WORDEN. Well, sir, we have been asked in our organization to investigate the safety and other aspects of drugs and other substances which may be used in the United States and as such will form the subject of an application here in Washington. I took the opportunity over 2 years to establish contact with your Division of Pharmacology,

Dr. Lehman and his colleagues, and with him all the programs to be undertaken have been discussed in advance, in all details, and as stated in my report, nothing under our act has prevented our fulfilling these completely, and to the satisfaction of your colleagues here in Washington.

Mr. ROBERTS. Is the same program which is in existence in Great Britain common to some of the other Commonwealth countries, say, for instance, our neighbor to the north, Canada, and perhaps on other members of the Commonwealth?

Mr. WORDEN. You are talking about the Cruelty to Animals Act?

Mr. ROBERTS. Yes.

Mr. WORDEN. My colleague, Major Hume, is an expert on those matters and will deal with that question better than I could possibly.

Mr. ROBERTS. But it is your opinion that there is no—that the research as such would not suffer and has not suffered from the fact that you have this type of governmental control in the United Kingdom?

Mr. WORDEN. Within the United Kingdom and within my own experience, it does not, sir.

Mr. ROBERTS. What about the cost of the system, do you have any estimates or ideas as to cost under this act and what the costs might be without the act?

Mr. WORDEN. The actual operational cost—Major Hume may be able to provide actual figures—I don't know. For the United Kingdom we have six medical men who form the inspectorate. They and their chief, and I presume a certain number of administrative people to help them, between them cover all that is undertaken in the United Kingdom.

Mr. ROBERTS. What about the recordkeeping, is that burdensome?

Mr. WORDEN. That is small in the sense that it requires, as Dr. Bernstein said this morning, only the writing into the book of the numbers of animals and what you are testing and the date and the certificate.

Mr. ROBERTS. How are most of your animals for research supplied?

Mr. WORDEN. In various ways. Some are bred specifically for the purpose either within the laboratory or by commercial or other organizations. In the case of dogs—we use considerable quantities of dogs in my own laboratory—we now buy all these from a pedigree breeder. There is no system in England whereby you can use a dog that has been impounded, that is not practiced. There are, of course, dealers who deal in other animals and so forth.

But in our experience the reliability of this material is less than that of the animal produced by the proper breeder.

Mr. ROBERTS. Thank you very much.

Next witness introduced by Mrs. Stevens is Maj. C. W. Hume, secretary general, the Universities Federation for Animal Welfare.

STATEMENT OF CHRISTINE STEVENS—Resumed

Mrs. STEVENS. Major Hume is the founder of the Universities Federation for Animal Welfare, which is a unique animal protective society in that all of its members are either students or graduates of universities, and there are many, many biological members; for example, Professor Medawar, the Nobel Prize Medal winner in 1960 in biology and medicine was the Chairman of their scientific subcommittee.

And many of the most distinguished scientists assist in the work of the Universities Federation.

Major Hume was also a founder and member of the Society for Freedom and Science and has all his life been a scientist, a physicist, and devoted his efforts for the past 25 years to animal welfare. Last year he received the Order of the British Empire for his services to animal welfare.

Mr. ROBERTS. Thank you very much.

Major, it is a pleasure to have you. And we appreciate the effort you have made to be our guest, our witness. And we will certainly be delighted to hear from you.

STATEMENT OF MAJ. C. W. HUME, SECRETARY GENERAL OF THE UNIVERSITIES FEDERATION FOR ANIMAL WELFARE

Mr. HUME. Mr. Chairman, I am very grateful to you for permitting me to tell you something about British experience in preventing irresponsible treatment of animals used for scientific research, an experience which has extended over 86 years.

Our system has been attacked in the United States by two opposite groups of extremists. At one extreme the antivivisectionists claim that it is ineffective and is merely a screen for unlimited cruelty in the laboratory. At the other extreme, the National Society for Medical Research claims that our system seriously hampers research in Britain.

Although these views cancel one another out, Mr. Rohweder, on one side, recently exchanged letters with Mr. Clarence Richard, on the other, whereby the two parties agreed to collaborate in opposing reform. My task is to show where the truth lies between these two extremes; but in passing I must notice a third line of resistance to which some of the less fanatical opponents of reform have retreated.

These allege that although the British can work a system like this, the Americans are incapable of doing so. Those who administer it do indeed have to be men of exceptionally high intellectual and moral caliber, capable of understanding the purposes and requirements of scientific research, humane, incorruptible, endowed with tact, firmness, moral integrity, and commonsense. We are asked to believe that while such men can be found in Great Britain, they cannot be found among the 150 million citizens of a nation which, on the technical side, has sent a satellite to Venus, and on the moral side is leading the defense of the free world against the threat of intellectual and spiritual enslavement. The task set by the Clark and Griffiths bills is indeed a formidable one, but to say that the United States is unequal to it is as preposterous as it is insulting.

Before giving my evidence I must state my own modest credentials, such as they are. Throughout my life I have been in close touch with research and invention. I was at one time an honorable Secretary of the British Science Guild, which had been founded by Sir Norman Lockyer and Sir Richard Gregory, founders of the scientific journal Nature, for the purpose of promoting the application of scientific knowledge and results to public affairs.

While I was Secretary of the British Science Guild I decided, with Sir Richard Gregory's encouragement, to apply its principles to the

welfare of animals, and accordingly I founded UFAW, the Universities Federation for Animal Welfare, which has sent me here today.

This body concerns itself with, among other topics, the humane treatment of laboratory animals. It publishes the standard textbook on the husbandry of laboratory animals, a textbook which is highly esteemed throughout the world and, incidentally, has some American contributors. It was also responsible for "The Principles of Humane Experimental Technique," by Russell and Burch, and for a recent international symposium on the assessment of pain in which, inter alias, six distinguished American neurophysiologists took part. In a debt in the House of Common on July 6 UFAW's factual statement "Experiments on Animals in Great Britain" was quoted as authoritative 28 times.

I come now to the contention put forward by the National Society for Medical Research to the effect that medical progress in Britain is hampered by bureaucratic interference with legitimate research. May I give one example of the extremes to which this fanatical opposition can go?

To the 1959 edition of the Encyclopaedia Britannica an article on "Animal Experimentation" was contributed by a director of the NSMR. As illustrative of what goes on in our laboratories it contained, inter alia, the fantastic statement that a person who used 12,500 fish in a research had to file a separate document at the Home Office for each animal, 12,500 documents in all.

What weight can be attached to the opinions of people who can adopt such stories? In fact the article was so misleading on the subject of British practice that a protest was sent to the editor of the encylopaedia by the honorable secretary of our Research Defence Society, and as a result the editor has, in the 1960 impression, cut out all that part of the article and substituted matter written by the technical secretary of UFAW, who is medically qualified.

If such contentions had any truth in them, British scientists would be anxious to abolish the burden of bureaucracy which is alleged to be hampering their researches. In fact, however, British scientific opinion is practically unanimous in approving of legal safeguards against cruelty. You may find a few grumblers who have worked in Britain and have chafed against these, but I venture to predict that they will be men whose scientific stature is insignificant.

To illustrate the view of experienced men who know what they are talking about, I would like to read a few recent letters from some of our more eminent scientists.

Lord Brain, better known as Sir Russel Brain, a past president of the Royal College of Physicians and editor of the neurological journal, "Brain," would himself have come to testify but for the shortness of notice. Instead he has sent me the following letter:

LONDON, ENGLAND, *August 16, 1962.*

DEAR HUME: I first had experience of the British regulations dealing with animal experiments nearly 40 years ago, when I myself held a license for a number of years. I never experienced the slightest difficulty in obtaining the necessary certificates to enable me to carry out experiments on any animals I wished to use and I always found the authorities very coperative when approached for guidance or help on particular points. The annual returns required presented no difficulty.

A very large volume of animal experiment is now carried out in the United Kingdom. The existence of the restrictions and inspections imposed by law

in my experience work extremely well and prevent the infliction of unnecessary pain on experimental animals without in any way restricting the activities of genuine scientific research.

Yours sincerely,

(Signed) BRAIN.

The Queen's surgeon, Sir Arthur Porritt, who is president of the Royal College of Surgeons and is also a fellow of the American Society of Clinical Surgery and has been appointed to the Legion of Merit of the United States, has written to me as follows:

AUGUST 14, 1962.

Sir ARTHUR PORRITT,

DEAR MAJOR HUME: As I said to you in my letter of August 7, I am more than sorry I cannot come to Washington but I am quite sure that you will be able to put the case admirably.

As you well know, at the Royal College of Surgeons, we have a large number of research departments in which animals are used and, as president, I deal with a vast number of requests from establishments outside the college during the course of the year.

Quite honestly, I have never heard of any genuine surgical research being hampered by our present regulations for preventing the infliction of unnecessary pain on laboratory animals.

Much as I admire American surgery and surgeons, I am sure the statement that our surgeons have to go to America to learn research is both untrue and unworthy. There are certain places and certain projects in America which are unique, but the same applies in this country and I am sure there is very genuine mutual respect between both countries, neither of whom would claim inclusive rights to the best method in anything.

I hope your mission is a success.

Yours sincerely,

(Signed) ARTHUR PORRITT.

Here is a letter from another surgeon, Sir Russell Brock, who is well known for his researches on the heart:

GUY'S HOSPITAL,
London, England, May 10, 1961.

DEAR MAJOR HUME: Thank you for your letter of May 3 and for the literature which you left with me at the time of your visit, and also for the letter in "New Scientist" which I think is quite disturbing.

May I say that I agree with all those people who support the great advantages of the normal procedure of control by the Home Office of medical research involving animals in this country.

I understand that it has been stated that my own early work on congenital heart disease was hampered by the restrictions imposed by the Home Office control. This is definitely not so.

Before 1948 the governors of Guy's Hospital, in common with the governors of other big charity hospitals, absolutely forbade the use of dogs for experimental research. This was through fear of losing donations to the hospital from those persons who objected to vivisection.

When the National Health Service came into being in 1948 the hospital governors no longer controlled the issue of Home Office licenses in the medical school and we were then completely free to use dogs and, in common with everyone else, I found the Home Office very helpful in every way.

Your sincerely,

(Signed) RUSSELL BROCK.

Here is a letter from Prof. P. B. Medawar, F.R.S., who received the Nobel Prize for Medicine and Physiology in 1960 and has recently become director of our National Institute for Medical Research; he

has also been chairman of the Scientific Advisory Committee of UFAW, which I represent here today:

MEDICAL RESEARCH COUNCIL,
NATIONAL INSTITUTE FOR MEDICAL RESEARCH,
London, England, August 27, 1962.

DEAR HUME: You asked me for my personal opinion, as an experimental biologist, on the nature and working of the Home Office regulations for research on animals.

Let me say first that I am in favor of regulations of this general kind. They restrict the performance of animal experiments to those qualified to execute them. They insure certain basic standards of care for animals of all kinds, not only for those which arouse the sentimental interest of the public. They also insure that eperiments which may give pain or discomfort are not lightly or hastily undertaken. The fact that there are forms to fill in and an inspectorate to satisfy brings it home to the beginner in research that doing experiments on living animals is a serious business.

As to the exact form that the Home Office regulations take, there is of course much that could be improved upon; but I have never found that the redtape was more than a nuisance, and in my experience the inspectors whose duty it is to enforce the act have been helpful and cooperative. On one occasion a number of years ago they actually helped me to get improved animal accommodation, by making critical comments on the animal quarters then at my disposal.

Finally, I do not agree that medical research work in this country is handicapped by Home Office regulations.

Yours sincerely,

(Signed) P. B. MEDAWAR.

Prof. C. A. Keele, who is professor of pharmacology and therapeutics in the University of London, and an authority on pain, would also have come to testify if he had been able to get here. He writes to me as follows:

DEPARTMENT OF PHARMACOLOGY,
MIDDLESEX HOSPITAL MEDICAL SCHOOL,
London, England, August 22, 1962.

DEAR MAJOR HUME: Here are my comments, which perhaps you would like to read into the record in Washington.

Our Home Office control of animal experimentation is, in my view, highly successful in preventing irresponsible persons inflicting unnecessary cruelty and in no way impedes legitimate research. We have always had cordial relations with the Home Office inspectors and have been only too glad to benefit from their advice on animal welfare.

The present system of control works in such a way as to create the right attitude toward animal experiments so that research workers come to realize that only by treating animals properly can results of scientific value be obtained. In my opinion lack of control leads to much worthless experimentation which is not only inhumane, but obstructive to scientific progress. In saying this I am sure that I am voicing the views of the vast majority of those who carry out animal experiments in this country.

Yours sincerely,

(Signed) C. A. KEELE.

Dr. John Baker, F.R.S., reader in cytology at the University of Oxford, is of interest because he is the founder and honorable secretary of the Society for Freedom in Science. He formed this society at a time when some leftwing physicists were attempting to impose on British science a regimentation of a kind which prevails in Communist countries. The society has done its work and is now being wound up. Dr. Baker would have come here to testify if he had been able, and writes to me as follows:

MY DEAR HUME: I fully agree with you that control of experimentation on higher animals is highly desirable, and indeed necessary, to prevent irresponsible performance of painful experiments. As you know, I was the founder of

the Society for Freedom in Science and have been the honorable secretary and treasurer of the society for 22 years; but I do not consider that there should be freedom to carry out experiments on higher animals without control. I am a licensed vivisectionist under the laws of Great Britain, which seem to me to be reasonable and have never interfered with my work.

I consider that experiments on all species of vertebrates should be controlled by law (as in this county).

Yours ever,

(Signed) JOHN BAKER.

Sir Graham Wilson is director of the Public Health Laboratory Service, and an honorable fellow of the American Public Health Association. He has been, among other things, professor of bacteriology in the University of London and is the author of some standard works on bacteriology. He writes as follows:

PUBLIC HEALTH LABORATORY SERVICE BOARD,
London, England, September 19, 1961.

DEAR MAJOR HUME: You asked me what my opinion was of the working of the procedure used in Great Britain to control experiments in animals.

I took out my first animal license in 1919. Between then and 1946 I worked continuously with animals, and had various certificates to enable me to undertake special procedures that might have been attended by pain.

During the last 16 years, though I have not been experimenting with animals myself, I have been in charge of the Public Health Laboratory Service which comprises over 50 laboratories using animals for routine and experimental work. Licenses have, of course, been required not only for the workers in these laboratories but for the premises themselves in which the animals are housed.

Not once during the whole of the past 40 years or so have I had any difficulty placed in my way of obtaining the necessary licenses or certificates for myself or others when there has been clear justification for them. Nothing has been done to interfere with the experiments which I or my colleagues wished to make.

Personally I have a strong regard for the feelings of animals, and either with or without a license I should refuse to undertake any experiment that caused severe or lasting pain. Not all workers, I am afraid, are so scrupulous and it is against these that, in my opinion, animals deserve protection. The system operating in this country seems to me to work well. To the conscientious investigator it offers no bar; to the unscrupulous, of whom in Great Britain there must be very few, it offers a wholesome check.

Yours sincerely,

(Signed) G. S. WILSON,
Sir Graham Wilson.

Such letters from such men—and I can quote many more—show how fanciful is the NSMR contention that our law hampers legitimate research. I turn, then, to our critics at the opposite extreme, the antivivisectionists who say that our law does not effectively protect animals.

Here I speak with the authority of the only British animal welfare society which is in a position to express an opinion on the subject, because many of our members work in laboratories and we ourselves maintain research for the benefit of animals at the Royal Veterinary College and at the Birmingham Medical School. And lest it be supposed that our sense of responsibility toward animals is not sincere, let me mention that the prohibition of the cruel steel trap in England was mainly due to our 30 years of struggle toward that end, and that we brought about the recent law for prohibiting the use of cruel poisons.

Speaking with this authority, I say then that by and large our law does achieve its humanitarian purpose. I do not claim that it is perfect. In several matters of detail I could criticize it. But on the whole there can be no doubt that it does afford a unique degree of protection

for laboratory animals without hampering legitimate research, and that the standard of responsibility toward these animals is much higher in Britain than in countries which have no such law, and immeasurably higher than it would be without legal sanction to give authority.

Our law provides that nobody may experiment on animals unless he has a Home Office license, and this license is not granted to irresponsible persons, such as schoolchildren, or to persons who have no scientific capability but wish to mess about with animals in order to clutter up the literature with papers which bring them spurious prestige.

These parasites are bad for the health of science, and the Home Office kills off most of them prenatally. Premises are also licensed, but that by itself is insufficient; the individual experimenter must be licensed, too. Heads of institutions carry a heavy responsibility of their own in this matter, but to devolve Home Office responsibility onto them would (1) deprive the system of the specialized experience and corpus of precedents built up by the inspectors and (2) set the "goat to guard the cabbages" in those exceptional instances in which the head of the institution is not reliably compassionate.

The individual license is a powerful incentive to correct behavior. For instance, Prof. F. A. E. Crew, F.R.S., the distinguished geneticist who was, I believe, the first to turn cocks into hens, wrote thus to the president of UFAW:

> You will not forget that on one occasion I slipped up, doing things for which I had no license.
>
> For a time it looked very much as though I was to lose the license that I had and that my career as an experimental biologist was to come to an end. Even during this period I was never in doubt about the value to me personally of the system. It helped me and it facilitated the work I was attempting to do * * *. I think that the kind of control that we know here is excellent in every way * * *. I think that the experimental animal should be given protection. I do not think that just anybody should be allowed to do just anything with a living creature.

Secondly, we have the Home Office inspectors. In a recent paper on the ethics of clinical trials carried out on human beings Sir Theodore Fox, editor of the Lancet, put forward the view that there ought to be, between the patient and the experimenter, a third party who can form an impartial judgment as to the ethical justification of the proposed procedure.

Sir Theodore said

> People in research do not always realize, I think, that part of their vocational outfit is an extraordinary capacity for concentrating on one object at a time.

He felt that a clinical researcher, who may be blinkered by the fever of the chase after truth, should be checked by an opinion from some unbiased third party before embarking on any procedure which might entail a risk of disadvantage to the patient.

Thus

> Between the experimenter and patient, in any serious experiment, there should always be someone who retains a full sense of proportion.

In the case of experimental animals as distinct from human patients, this is the function fulfilled by a Home Office inspector, who specializes in the study of the ethics of experimentation on animals and can see fair play between the animals' claim to humane treatment and the experimenter's enthusiasm for his research project. The guidance of the Home Office inspectors is welcomed nowadays because (1) it helps

the researcher to clarify his own conscience and (2) it protects him from unfair and wounding accusations made by antivivisectionists.

Finally. we have the pain rule which sets a limit to the amount of suffering that may be inflicted in any case. Obviously opinions must differ as to exactly where the line should be drawn, but the line is drawn, and in our laboratories we do not commit the atrocities which are reported from time to time in scientific papers from other countries.

As Mr. Leonard Colebrook, F.R. S., famous for research in surgery, has remarked in a letter to our President:

> I suppose most scientific people who have any compassion would agree that there are some experiments on animals which are not legitimate.

And Professor Lowenstein, F.F.S., wrote:

> I myself have had to give up a line of research * * * but in view of the fact that there are many other things for me to do I do not feel seriously frustrated.

In Britain we do not allow the extravagant cruelty committed by some investigators of stress and shock. We believe that the desired results can be obtained by less inhumane procedures, but even if that were not the case, there is an ethical limit to what is tolerable.

Lethal experiments carried out by Nazi scientists on Jews and others may have yielded valuable information, but that does not justify them, and in the same way there is a limit—an arbitrary limit if you like, but a real one—to the amount of pain which may be legitimately inflicted on any animal for any purpose, be it dog, rabbit, rat, or mouse.

The Griffiths bill H.R. 1937 differs from our law in three important respects. First it avoids the antiquated procedure for the granting of licenses and certificates which has survived from the past in our country, and may cause a week or two of delay. Secondly, unlike our law, it has to meet the difficulty of States rights, and so it only applies to scientists in laboratories which are benefiting from Federal funds. This is an unavoidable weakness, but at least it makes a beginning, and means will doubtless be found, as experience accumulates, for improving the law as time goes on.

Thirdly, in Britain, licensees have to obtain the necessary permission before they begin their experiments. This would be impracticable in the United States because it would necessitate the immediate overhaul of a vast number of research projects. This could not be done overnight, and the Griffiths bill recognizes that it will take time to work out the practical application of the law.

It may take years to achieve the purpose envisaged in this bill, limited even though it be. You cannot make such a vast change without long and patient endeavor. The bill provides means for gradually raising the ethical standards in the most backward laboratories up to the level of those which prevail in the ethically most advanced research institutions.

The expression "project plan" used in the bill has caused some misgivings but it presumably corresponds to the definitions inserted in British certificates A and B which permit the use of conscious animals, and no doubt the practice followed in the two cases would be somewhat similar. The ambit of these definitions may be narrow or wide according to circumstances. A nongraduate technician might, for instance, be licensed to carry out only one particular procedure of a routine character.

In the case of a senior scientist who is known to be ethically reliable the definition might be in wide enough terms to embrace a large class of procedures, but in this case if the licensee wished to adopt a procedure which might entail serious discomfort he would consult his inspector, and the inspector would, if necessary, consult an appropriate member of the Advisory Committee at the Home Office.

In order to achieve its purpose such a system must gain the good will and collaboration of a majority of the leaders of science, as it has done in Britain. I have, therefore, to deal with two questions which may arise out of this fact. Everybody knows that passionate and bitter feelings have been whipped up amongst American scientists by means of violent and fanatical propaganda, and the climate of opinion among them is at present unfavorable to this reform; indeed it is in some cases almost hysterically hostile.

But I venture to predict that with the passage of the bill passions will calm down, commonsense will prevail, and the love of truth which is natural to all true scientists will bring about a humane and responsible climate of opinion.

Secondly, it has been suggested that the desired reform should be left to voluntary action by scientists themselves. But without legal sanctions such voluntary persuasion will certainly be ineffective, for it has been tried and failed. American scientists have for many years drawn up ethical codes for the laboratory, but in the absence of any legal status for these they have failed to prevent irresponsible and cruel experimentation, not only by the camp followers of science but also by experienced scientists.

As recently as September 14 an American scientist, at a symposium at the Postgraduate Medical School in London, described an experiment so cruel that it profoundly shocked the moral conscience of a by no means sentimental scientific gathering.

May I as an appendix put in the letters which we received in response to a questionnaire issued last year in connection with Senator Cooper's bill? The questionnaire was issued to all biological fellows of the Royal Society, which embodies the cream of our research scientists, and to a small number of other scientists.

Of 89 who replied, only 1 would favor repeal of our law. These letters are summarized in a printed leaflet "Opinions of British Scientists on the Home Office Control of Experiments on Animals," which I have included as exhibit C. Here are a few quotations from them:

Sir Francis Walshe, F.R.S., wrote:

A wide familiarity with the literature of experimental neurophysiology leads me to think that in other countries where no such rational mode of control is used, not a few futile and unnecessarily painful animal experiments are carried out by persons not always qualified to do them.

Prof. H. A. Krebs, F.R.S., a Nobel Prize man, wrote:

I am very glad indeed to support a move to introduce in the United States legislation on animal welfare similar to that operating in Great Britain.

Prof. A. Haddow, F.R.S., Director of the Chester Beatty Cancer Research Institute, wrote:

I have, of course, been most interested to learn of the American bill, and sorry to hear of the opposition to it.

Sir John Hammond, F.R.S., of the Cambridge School of Agriculture, wrote of Home Office control:

It forces us to train our young research workers efficiently.

Prof. David Keilin, F.R.S., of the Molteno Institute, Cambridge, wrote:

It compels the worker to plan and to carry out his experiments with more care. This greatly improves the quality of the research and is of benefit to the research worker himself.

Prof. A. St. G. Huggett, F.R.S., a physiologist, wrote:

The act of 1876 stops the frivolous but not the responsible worker.

Dr. E. N. Willmer, F.R.S., wrote:

I see no reason to believe that the licensing system affects the quality of medical research adversely. It may certainly prevent certain fields from being investigated by methods which most of us would find repugnant, but other lines of investigation will no doubt be found for those areas, which are in any case small.

I have here quite a number of letters. I don't think you would wish me to burden the record with all of these, but if I might pick out the most interesting of these, I will hand them to the clerk.

Mr. ROBERTS. Without objection.

(The letters referred to may be found in the files of the subcommittee.)

Mr. ROBERTS. Thank you, Major, for a very interesting statement. We greatly appreciate that a man of your many responsibilities would take the time out of a busy schedule to come here and give us the benefit of your experience and your learning in this field.

I want to congratulate you as chairman of this subcommittee on an excellent statement, and I think one that will be of great value to the committee in its deliberations on the bill.

I regret that not more of our members are here to hear this statement, but I can assure you that they are busy people, and that your statement will receive their attention and consideration.

Mr. HUME. Thank you very much, sir.

Might I add one thing. You asked a question of the previous witness about the history of our act. I think I could answer that if necessary.

Mr. ROBERTS. I would like you to supply that.

Mr. HUME. The act was introduced when there was very little experimentation on animals being done in Britain, we were just beginning in those days our experimental biology. And there was very little opposition. The promoters of the act were Charles Darwin and Lionel Playfair. On the other side there were some antivivisectionists, but the essential promoters were Charles Darwin and other scientists.

And there was some criticism in the House of Commons, the people said, you are making out that scientists are a cruel people and they are not, and so on, there was that sort of thing said, but there was no serious opposition. And the bill was passed through both Houses of Parliament on its first attempt, it didn't have to be introduced more than once. I will submit a copy of a "Historical Note on the British Act of 1876 Regulating Animal Experiments."

(The publication referred to was placed in the committee files.)

Mr. ROBERTS. I notice your comment with reference to the project plan that is outlined in the Griffith bill. And I was interested in what you had to say about the work ability of that kind of a plan.

Do you think that the project plan might be restricted somewhat so that it would cut down on the paperwork that the researcher would be required to do in order to perform some of the experiments?

Mr. HUME. Yes. In our case it doesn't run to more than a few lines on the certificate B. I have back there a few samples of our wording which I could hand to you afterward, if it would be of interest.

Mr. ROBERTS. I would like to have that. I wonder too if you could supply us with a copy of the British Act, or if any of the other witnesses have done that.

I am not sure whether a copy of the act has been placed in the record.

Mr. HUME. I have that. I ought to warn you that it is badly worded. It had to be cut up very badly in the committee. The fact is that a lot of study is needed before you can see what it amounts to. But it really gave the Home Secretary a pretty free hand.

And we worked out, in collaboration with the first chief inspector, Sir George Thayne, who was a very able medical man, he worked out the method of administering the act, and the act itself doesn't tell you very much, it is the interpretation of the act that matters.

Mr. ROBERTS. Can you give us any idea of how frequently the inspectors visit the various laboratories and places where the animals are kept?

Mr. HUME. Yes, sir; the average is about three times a year. But that doesn't give you a fair idea, because some people they know to be all right, they hardly ever see, for instance our girl at the Royal Veterinary College hasn't seen an inspector in 5 years, they know she is all right. But somebody they are doubtful about they will visit very frequently.

Mr. ROBERTS. Mr. Nelsen.

Mr. NELSEN. We are glad you took the time and trouble to be here, and certainly your statement represents a good deal of time and research. Thank you.

Mr. HUME. Thank you very much, gentlemen.

I am greatly honored.

Mr. ROBERTS. Our next witness will be Mrs. Ann Free, of Washington.

STATEMENT OF ANN COTTRELL FREE, WASHINGTON, D.C.

Mrs. FREE. Thank you, Mr. Chairman. I will be very brief, because I know there are others.

Mr. ROBERTS. I know Mrs. Free has done quite a bit of work on this. She was one of the people who was primarily responsible for the passage of the humane slaughter bill, and she has done a lot of work in connection with improving the Washington Zoo and pointing out some of the questionable places out there. I think that some of her recommendations are being followed.

She is a writer for the North American Newspaper Alliance and various magazines and periodicals.

It is a real pleasure to have you here with us.

Mrs. FREE. Thank you very much, Mr. Chairman, for your invitation to tell the committee my experience as a newspaperwoman in the case of the Food and Drug Administration experimental dogs.

This experience and research into the laboratory animal problem has convinced me of the following:

Experimental animals are regarded too often as mere tools. They are considered similar enough to man physiologically for all kinds of tests of benefit to man. But they are not considered similar enough when it comes to feeling some of the discomforts man would yell to high heaven about. We talk about creature comforts in discussing our own sense of well-being. But when creatures are involved, these basic comforts are often denied. I am not being anthropomorphic, but only applying a rule of commonsense.

This experience has also convinced me that many of those who protest the loudest about making improvements later become advocates of better conditions. This is true of many at FDA. I point out parenthetically that this is the case of the meatpackers who once protested a Federal humane slaughter law. Today many of them point with pride to their new, humane, more economic methods.

Now for the FDA story: I could not believe it when a troubled FDA scientist told me in October 1959 that deep in the subbasement of the South Agriculture Building dogs were kept in cages for life.

Only seeing would be believing. I obtained permission to see these animals.

In those windowless, subbasement rooms hundreds of dogs flung themselves against the bars of their cages, piled tier on tier. They were barking, screaming, whining. A few are mute—and drooped their heads in the dark corners. Others circled ceaselessly in their cages. The steel grids beneath their feet showed their pathetic, circular path. These dogs, mostly beagles, are used primarily for the testing of food additives. Some remain in their cages for 7 years.

We often refer to the places we love as a little bit of heaven. Each of these rooms is a little bit of hell.

Mr. Chairman, as a newspaperwoman I have seen in the course of my work many harrowing spectacles. I worked in China and have lifted starving children from the streets in the interior provinces of Hunan. I am also the mother of a young daughter and I have a great concern over the conditions governing the life of our communities. In short, the lives of people do not play second fiddle to my regard for animals.

But this sight made me realize that here was needless irreverance for life.

I was appalled when FDA scientists told me that when they obtained a new $26 million office and laboratory building, they planned to continue lifetime caging of these hundreds of dogs. No provisions for exercise were being made.

Only after 4 months of protest from Senator Lister Hill and humanitarians did FDA agree to greater freedom for these animals, provided funds could be obtained for a lab and animal facility in the country.

Senator Hill and Representative John Fogarty, respective chairmen of the Senate and House subcommittees handling FDA funds, were favorable. Even so, it took nearly 2 years for FDA to obtain the

funds. And due to redtape and snafus with the local authorities in nearby Maryland the project has been delayed. But FDA expects that contracts will be awarded in a few days. Work will begin soon at the Beltsville Agricultural Station location and will be completed prior to December 1963. More than 500 dogs will be housed in inside-outside runways. Laboratory and supporting space will be adjacent.

Appropriation of funds to remove these wretched animals from their medieval jails—where they are acting as servants of humanity—was a landmark in congressional concern for animals.

There are many other long-term dogs kept under similar conditions throughout the Nation. The Animal Care Panel is now setting up standards, for voluntary compliance, for test animal housing and care under a $14,000 NIH grant. But it has not yet reached a decision on the quartering of dogs. It is more expensive to provide the run space, as compared to cages. But it is also expensive to buy a first-rate microscope, X-ray apparatus, and other tools needed in scientific research. And these animals, being endowed with life, are more than mere tools. The Congress has already provided money on a matching fund basis for laboratory installations that would include proper humane animal quarters. But it appears there is a curious reluctance in taking advantage of it.

Thank you, Mr. Chairman, for asking me to tell my story.

Mr. ROBERTS. Thank you very much, Mrs. Free. The subcommittee appreciates your deep interest in this matter.

I might say that the chairman is certainly aware of your success in other fields, and he is grateful to you for your appearance.

I am placing in the record an article by Josephine Ripley in the Christian Science Monitor on the laboratory animal problem and your efforts in regard to the FDA animals. Also, I am putting two of your syndicated articles in the record.

(The documents referred to follow:)

[From the Christian Science Monitor, Mar. 8, 1962]

WASHINGTON REPORT—A RENEWED SENSITIVITY

(By Josephine Ripley)

Man is a dog's best friend, but he sometimes needs to be reminded of it.

A newspaper woman whom I know, Anne Free, of the North American Newspaper Alliance, took on that reminding job a few years ago with such tenacity that Congress went out of its way to vote money for more humane treatment of the Government's experimental dogs.

Anne had heard that these animals were cooped up in cages in which they could hardly turn around, the cages piled one on top of another in the basement of a Government building.

She insisted upon seeing this for herself, found it to be true, and immediately took off on a one-woman crusade to change these conditions. She found a sympathetic listener in Senator Lister Hill, Democrat, of Alabama. As a result of her efforts, Congress, in an unusual procedure, since department budgets for the year were already set, voted special funds for more adequate quarters for these dogs at the Beltsville Experimental Station in Maryland.

This was the beginning of a renewed sensitivity by the public to the need for animal protection. Behind this need is something that comparatively few persons realize even now. That is the tremendous increase in the use of animals for medical and other experimentation.

Ten times as many dogs are being used in testing food additives as were used for that purpose in 1956. These chemical additives have developed rapidly since the war. They are used in foods, cosmetics, and pesticides sprayed

on crops, and in many other ways. Many other animals of course are also used in this method of testing.

It is estimated that today more than 300 million animals of all kinds are used in research laboratories, both governmental and private, each year.

Humane societies have been protesting the treatment, or mistreatment, of animals in the research experiments. Many, it is charged, have been subjected to unnecessary pain or tended by nonprofessional kennelmen.

This has led to the introduction of two bills in Congress to require humane treatment of all these animals, and to set up standards of procedure and care which will bring this about.

One of these bills has been introduced by Representative Morgan Moulder, Democrat, of Missouri; the other by Mrs. Martha W. Griffiths, Democrat, of Michigan.

There is no bill in the Senate at the present time. Senator John Sherman Cooper, Republican, of Kentucky, introduced such a bill a few years ago, but has not reintroduced it in the present Congress.

Neither of the bills, it should be understood, are antivivisection bills. They do not oppose experimentation, but they do establish standards which would require all laboratories, coming under Federal jurisdiction or using Federal money, to spare animals all unnecessary pain and give them adequate care.

Despite the successful crusade of Anne Free which helped provide larger quarters and exercise runways for animals used in Government experimentation by the Department of Health, Education, and Welfare, there are still many laboratories which scrimp on animal quarters yet spend money on plush office accommodations for company executives.

The Moulder bill specifically requires humane shelters, including food, water, exercise, sanitation, light, temperature, humidity, and ventilation. It spells out the rules which should be followed in laboratories to spare the animals through the use of anesthetics unless such use would be considered to hinder the purpose of the experiment.

The bill provides for an enforcement agency in the form of an agency for Laboratory Animal Control, under a commissioner protected by law from political pressures.

The Griffiths bill is much the same in tenor, calling for the licensing of personnel engaged in this work, and providing for Government access to books and to the premises.

Both bills are supported by various humane organizations, such as the Humane Society of the United States, the Animal Welfare Institute of New York, and the National Catholic Society for Animal Welfare.

No hearings have been set as yet for these bills which come under the jurisdiction of the Interstate and Foreign Commerce Committee, of which Representative Oren Harris, Democrat, of Arkansas, is chairman.

Many advocates of this legislation are now writing to Mr. Harris in an effort to get a hearing for this legislation and others are even appealing directly to the White House. The Humane Society is urging that people write to editors of their local newspapers appealing for support for the Moulder bill.

HUMANITARIANS DOING FIRST-RATE JOB OUTLAWING ANIMAL BRUTALITIES

(By Ann Free, McClure Newspaper Syndicate, Washington)

Don't underrate the political power of humanitarians.

They've been doing a first-rate job in the last few years to outlaw brutalities to animals. And it is largely overlooked by those who still think of the stereotype "image" of the bleeding heart fuddy-duddy.

Not only have their efforts helped animals, they are helping this Nation in the eyes of the world. For example, their recent successful efforts—even to calling on President Kennedy for help—to eliminate clubbing from the annual rabbit roundup at Harmony, N.C., is saving this country from some embarrassment.

They have prodded the U.S. Government into signing the International Convention for the Prevention of Pollution of the Sea by Oil. Thousands of sea birds have died a lingering death because ships discharged oil in areas where birds often alight. A new law prohibits the discharge of oil within 20 miles of shore and in some areas up to 100 miles.

They were successful recently in persuading the Congress to appropriate funds for the Food and Drug Administration to build proper quarters for its hundreds of test dogs. For years they have been confined without relief in tiny cages in a subbasement.

A few years ago, thousands of letters—and not all written by members of humane societies—flooded Congress demanding a law to provide humane methods of slaughter of meat animals. Fifteen other countries, including the Fiji Islands, have such laws. Federal legislation, however, does not cover all animals, therefore legislation is or will be sought in 38 States that to date have not passed State humane slaughter bills.

WILD HORSES

Then there was the passage of the "wild-horse" bill, which forbids the rounding up by airplanes of wild horses still left on the plains and rimrock. This success prompted the last Clark Gable film, "The Misfits."

And at the end of the last session of Congress, President Kennedy signed a law making surplus grain available to prevent starvation of game birds and other wildlife during blizzards.

Much of the recent progress is due to the entrance into the field of several new national humane organizations. Also many church and civic groups, including the General Federation of Women's Clubs, have backed humane legislation. Pope John recently gave his blessing to the 3-year-old National Catholic Society for Animal Welfare.

Many humane campaigns still lie ahead. For example, humane groups take a dim view of the Department of Interior's recommendation that sealions in Alaskan waters be slaughtered for mink food. Experimental slaughter action left many animals maimed. Legislation will probably be introduced to outlaw, as it is in several countries, the steel leg-grip trap, asking that the more humane instant-killing traps be substituted. In Western States, such as Wyoming, there is a move afoot to outlaw "steer busting" exhibities that cripple and kill steers.

Two bills are now pending in Congress to regulate the care and use of animals used for research. Proponents claim that medical science will not be set back, but furthered by better provisions for care and for control of fear and pain.

The record to date of humanitarians in obtaining animal protective laws is leading many Congressmen to the same conclusion. It is, they realize, both morally and politically sound to heed their constituents' and their own unquiet consciences in working to forbid cruelty.

NOTE.—This column was distributed nationally by the McClure Newspaper Syndicate. The one reproduced here appeared in the Champaign-Urbana (Ill.) Courier on November 30, 1961.

[From the Des Moines Tribune, Sept. 26, 1962]

HEARINGS SET—LAB ANIMALS' CARE PROTESTED

(By Ann Cottrell Free)

WASHINGTON, D.C.—This Friday, for the first time in history, Congress will listen to the increasing demands for better care of the millions of animals used in federally supported research.

The increase of research funds into the billions of dollars has resulted in an unprecedented use of experimental animals. It is estimated that as many as 300 million animals are used annually in medical, atomic, defense, and space research.

Many of these animals reportedly are ill housed. Dogs, for example, often are kept in cages without exercise for years. Needless suffering, humanitarians claim, results from inadequate postoperative care. Also, they say, painful experiments may be needlessly duplicated because of an inadequate central clearinghouse on test information.

LETTERS POUR IN

Representative Kenneth Roberts, Democrat, of Alabama, chairman of the subcommittee that will hold hearings, says: "This is a field that has grown so fast that the facts must be explored and put on the printed record."

It is too late for action this year, he said. But hearings are being held, nevertheless, in response to thousands of letters flooding congressional offices for the past 2 years.

The bills before the Health and Safety Subcommittee of the House Interstate and Foreign Commerce Committee would set standards for the licensing of researchers on animal-using projects receiving Government funds.

BILLS BEING FOUGHT

The bills are being fought by antivivisection groups, whose aim is to outlaw all scientific use of animals. Opposition also have been voiced by the American Medical Association, the American Pharmaceutical Association, and the National Society for Medical Research.

In fact, the latter group has joined forces in a strange alliance with the National Anti-Vivisection Society to combat what Representative Roberts terms a "moderate approach" to the problem.

The scientific groups contend that abuses are too few to warrant the necessary paperwork of a regulatory law. They prefer voluntary compliance with standards set by themselves.

Support of the bills has come from Protestant, Catholic, and Jewish leaders and in particular, the Protestant Journal Christian Century.

BRITISH LAW

The story of the 86-year-old British laboratory-animal law will be told by British humanitarians and scientists coming to Washington for the hearing. Passage of this law was urged by Charles Darwin in 1876.

Sponsors of the proposed legislation are Representatives Martha Griffiths, Democrat, of Michigan, and Morgan Moulder, Democrat, of Missouri, and Senators Joseph Clark, Democrat, of Pennsylvania, and Maurine Neuberger, Democrat, of Oregon.

Moulder's bill differs from the others primarily in that the administration of the law would be under a presidentially appointed commissioner. The others would give the responsibility to the welfare secretary.

The bills require that experimenters receiving Federal funds provide animals with comfortable quarters, adequate nourishment, and sufficient space for normal exercise. Painful experiments would be reduced by a project approval system. Scientifically trained Federal officials would be given the right to enter the laboratories.

Mrs. FREE. Thank you, sir.

Mr. ROBERTS. I am informed by the gentleman from Minnesota that he has two witnesses to introduce who are catching planes this afternoon, Dr. Thorp, dean of the College of Veterinary Medicine, University of Minnesota, and Dr. Maurice B. Visscher, professor of physiology, University of Minnesota.

First we will take Dr. Thorp.

STATEMENT OF DR. WILLIAM T. S. THORP, D.V.M., DEAN, COLLEGE OF VETERINARY MEDICINE, UNIVERSITY OF MINNESOTA

Dr. THORP. Mr. Chairman and members of the committee, I am William T. S. Thorp, doctor of veterinary medicine, dean of the College of the University of Minnesota. I have spent 19 years in animal disease research, primarily pathology. I have my specialty board in pathology and in laboratory animal medicine. I participated in the biomedical program of the AEC, and I am on a number of councils related to all types of biomedical research. As a charter member of the Animal Care panel opposing H.R. 3556 and H.R. 1937 I would like as chairman of the committee on Animal Facilities in Medical Research of the National Research Council to report briefly on this committee's survey started in January 1961.

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It is the efforts of this committee's survey relative to the proposed legislation that I wish to direct my attention to here.

The committee consisted of 10 members, 5 survey teams. The United States was divided into regions; namely, the northeast, southeast, north-central, south-central, and west. The 58 nonprofit, non-Federal medical research institutes visited are listed in the report. It should be emphasized that the care and management of laboratory animals is a fundamental aspect of research in biology and medicine. Laboratory animal medicine has evolved as a specialized professional field to assure the proper maintenance of experimental animals in research institutions. This is an outgrowth of the financial support for medical and biological research. The increased use of animals and the greater refinement and research technique require better quality animals. The fact that medical research programs appear destined for further support and expansion prompted the survey on animal facilities in medical research. Many criteria were taken into account to properly evaluate an institutional animal program. Much of this depends on the size of the institution, the number of animals in its research, teaching and service programs. The survey particularly concerned itself about administration, animal procurement, personnel training, professional direction for animal care activities, career opportunity for animal technicians in their training, buildings, space, and environmental controls, equipment and materials, disease control, and financial support. The research workers in all institutions surveyed have accepted the concept of the proper care of laboratory animals as essential to the success of the investigations. It is depended upon the competence and training of the professional and nonprofessional personnel that are responsible for the research animal.

I personally have participated in planning and developing a number of animal facilities in medical research institutions, not as a paid consultant, but in connection with certain committee work, likewise as a commissioned officer in the Public Health Service at the National Institutes of Health until 1954.

When one analyzes the survey material in classifying the whole animal research program as good, fair or poor, there was a direct relationship between the good operation and the facilities and the moneys available to operate the animal facilities for research.

There are many details documented in this preliminary statement which will be followed by a more detailed second report now in preparation, based upon the mailing of questionnaires to 500 institutions not visited.

Mr. Chairman, I wish to ask the committee to include this report in its entirety in the record as a part of our hearings and as a part of this presentation.

Mr. ROBERTS. Without objection this report will be included in the record.

Dr. THORP. Thank you.

(The report referred to follows:)

ANIMAL FACILITIES IN MEDICAL RESEARCH

a preliminary study

A Report of the

Committee on the Animal Facilities Survey

May, 1962

Institute of Laboratory Animal Resources

National Academy of Sciences - National Research Council

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FOREWORD

This report of the work of the Committee on the Animal Facilities Survey is preliminary to a more complete examination of laboratory animal facilities, space, equipment, personnel and training currently being completed by the Institute. The report is based on site visits made during the first four months of 1961 to fifty-eight nonprofit, nonfederal medical research institutions in the United States. A second report, now in preparation, will include information obtained from nearly 500 institutions surveyed by a mail questionnaire.

The ten members of the survey team (Appendix III) and the Chairman of the Committee, Dean W. T. S. Thorp of the University of Minnesota College of Veterinary Medicine, devoted much time and energy to the completion of this study, and their efforts are gratefully acknowledged by the Institute. Dr. William I. Gay, Chief, Animal Hospital Section, National Institutes of Health, rendered valuable assistance to the Committee in the design of the survey, the questionnaire and the final report. The deans and directors of the institutions included in the survey were most cooperative and extended many courtesies to the site visitors.

The program was supported by Grant RG-8514 from the Division of General Medical Sciences of the National Institutes of Health.

Introduction

The care and management of laboratory animals is a fundamental aspect of research in biology and medicine. Recently, laboratory animal medicine has evolved as a specialized professional field, to assure proper maintenance of experimental animals in research institutions. This development is a natural outgrowth of the increased financial support of medical research in recent years, of the consequent increase in the numbers of laboratory animals used, and of the great refinement in research techniques which requires better quality animals and animal care.

Medical research programs seem destined for further expansion in the future both in terms of the volume of animals required and their complex, qualitative requirements. Undoubtedly this will require an increase in facilities and personnel for laboratory animal care. However, a detailed analysis of the present status of this field should precede any expansion in these programs. Without this information, it would be difficult or impossible to estimate future requirements and to determine where the greatest emphasis is needed. For this reason, the Office of the Director, National Institutes of Health, expressed interest in Academy-Research Council sponsorship of a survey of laboratory animal facilities in nonprofit, nonfederal medical research institutions in the United States.

The Executive Committee of the Institute of Laboratory Animal Resources approved the submission of a grant proposal for this survey on July 27, 1960. On November 5-6, 1960, a conference was held of twelve veterinarians, experienced in laboratory animal care, to recommend the extent of the survey, develop an appropriate questionnaire (Appendix I), and recommend the institutions to be site surveyed. Approximately fifty nonfederal, nonprofit medical research institutions in the United States were to be visited, and their laboratory animal facilities evaluated with respect to space, equipment, personnel, budget, and administration. The objectives were to determine the present status of animal care in these institutions, and to obtain estimates of their present and future requirements to assure proper care of their experimental animals.

The Division of General Medical Sciences, National Institutes of Health, provided funds for the survey, for the period January 1- December 31, 1961. (The termination date was later extended to September 30, 1962). It was conducted according to the following plan: Approximately ten research institutions, in each of five geographic regions in the United States, were selected for site visits (Appendix II). Letters were written to each institution soliciting assistance in conducting the survey. Ten of the veterinarians who participated in the preparatory conference were designated as regional consultants (Appendix III). They made the actual surveys, operating as two-man teams in each region. A total of 58 institutions was

surveyed. However, many of the summary tables in this report represent less than this number. Some institutions could not answer all questions since the information requested was not available or the question was not applicable. Excellent cooperation was received from the personnel of all institutions surveyed. After each site visit, the survey teams returned the completed questionnaire to the Institute of Laboratory Animal Resources; and the information was tabulated by the Institute staff. The regional consultants then met to prepare this final report.

It must be emphasized that the information in this report is representative only of the institutions surveyed since no standardized sampling method was employed in selecting them. It must also be stated that the conclusions are based primarily on the individual experience of the site visitors. Objective criteria and standards for evaluating animal care are not yet available. This is an important unfinished task for which, it is hoped, this report will set the stage.

Section I - Animal Procurement and Use

The proper evaluation of an institutional animal care program must take into account the size of the institution and the number of laboratory animals involved in its research, teaching and service programs. Tables 1 - 4 list the numbers, sources of supply and categories of use of animals in the institutions surveyed.

Table 1 indicates the total numbers of animals used during 1960 by 57 of the 58 institutions examined. Table 2 is a summary of laboratory animal utilization classified according to the type of nonprofit research institution.

The sources of animals used in 55 of the institutions are listed in Table 3. They are divided according to whether the animals are bred within the user institution, obtained from commercial or academic sources, or collected from nature. The large number of dogs and cats obtained from pounds demonstrates the importance of this source to research institutions. In addition, many of the dogs and cats reported as "purchased commercially" were apparently purchased from municipal pounds. The large proportion of primates collected from nature is largely the result of direct collection of primates in Africa by one institution.

Table 4 indicates that a high percentage of the animals are used for research, and lesser percentages are

used for teaching (demonstration and practice) and service (diagnosis and biologicals production).

Section II - Administration

Animal care facilities in the institutions surveyed are not organized uniformly. Obviously, the diversity in function of these institutions accounts for some of the differences. However, even among institutions of the same type, there is much variation in the administrative organization. The situation in medical schools varies from those having a centralized animal care division, directly under the Dean, and headed by a director with professional qualifications in laboratory animal medicine and husbandry, to those institutions with completely separate animal quarters for each department. The administration of these individual animal colonies is entrusted to a staff member in each department. An example of the diversity of administrative arrangements can be found in three medical schools, located in the same general geographic area. The central animal facilities of School A are administered by a professional director responsible to the Dean, through a faculty committee. School B has no central animal facility. The responsibility for procurement and maintenance of animals, equipment and facilities rests with each department. School C, midway between these extremes, has a central animal facility under the direction of a professionally qualified person, reporting directly to the Dean. However, only one-third of this school's research

animals are maintained in these quarters. The remaining two-thirds are held in departmental quarters under the control of individaul investigators.

Many institutions have "animal facility committees." Membership is drawn from those departments using most of the animals. The committee acts as an advisory body to the Dean and to the director of a central facility; or in some instances where there is no professional director it manages the operation of the animal colonies. In the latter instance the chairman of the committee is the de-facto director of the animal facilities.

The experimental and test animal quarters in the eight hospitals surveyed generally were under the jurisdiction of the department of pathology (department of laboratories, experimental animal department), with the department chief acting as the operating head of the animal facility. Animal colonies were maintained in more than one department in only a few of the hospitals.

Five of the eight veterinary schools visited have decentralized animal quarters under departmental control. In two schools the Departments of Pathology and Bacteriology maintain facilities which apparently function as central units for all departments. One school provides separate departmental facilities but also has a "centralized" animal farm facility directly under the Office of the Dean.

The administration of the animal quarters in 5 private laboratories also varies. Two laboratories have separate

departmental animal facilities, under the jurisdiction of the department heads. Two others have centralized facilities managed by a veterinarian trained in laboratory animal medicine. Finally, one laboratory operates two geographically separate animal facilities which have no evident administrative connection.

Only three dental schools are included in this study. Two of these maintain separate departmental animal quarters and the third utilizes the animal care facilities of its affiliated medical school.

Section III - Personnel and Training

Research workers in all of the institutions surveyed have accepted the concept that proper care of laboratory animals is essential to the success of their investigations. They recognize that the adequacy of animal care is determined by the competence and training of responsible professional and non-professional personnel. Accordingly, investigators are supporting efforts by national professional and scientific organizations to promote a more adequate career opportunity for these personnel.

In the experience of the site visitors, the present overall performance of animal care is greatly superior to that practiced as recently as 5-10 years ago. In many of the institutions professional personnel with excellent training and experience now direct or supervise animal care; the training of animal technicians has improved, and this has resulted in improved sanitary conditions, disease control, and better handling

and management of animals. Despite unquestioned progress, however, certain problems related to personnel are hindering some institutions from achieving the best possible standards. These are listed below along with suggestions for dealing with them.

1. Professional direction for animal care activities.

Eleven of the fifty-eight institutions have organized their animal facilities under full time professional direction. In the remaining forty-seven institutions the direction of animal care is a responsibility of one or more staff or faculty members, whose major responsibilities and professional interests lie elsewhere. The time they devote to the animal care activity varies with their other commitments.

As a natural consequence of the increasing specialization of research and its tools, not all investigators have the experience and training to provide completely for their animals under modern laboratory conditions. In most institutions, animal facilities must be shared by many research workers. Frequently, this complicates the problems of disease control, utilization of space, management of personnel, and other related problems. The individual investigator is not equipped to deal with difficulties which arise, almost inevitably, where there is no overall organization of animal care, and where he has no one to assist him in the solution of his animal care problems.

It seems obvious that provision for adequate professional supervision is essential in promoting further progress of laboratory animal care. All institutions, regardless of size, should have access to professional knowledge and skills in this

field. Those installations having extensive research programs should consider full time direction of their animal care programs. In smaller institutions part time consultation with specialists may be feasible; or a member of the staff with appropriate experience could devote the time necessary to assure the adequacy of animal care.

2. Career opportunity for animal technicians.

Ultimately, the quality of animal care depends on the skill with which animal technicians meet their daily responsibilities. In some institutions the care of animals is organized primarily as a custodial rather than a technical activity. The salary scale for this group frequently is based on a comparison with building maintenance positions rather than with more skilled laboratory positions. These limitations greatly restrict the development of career positions for animal technicians, and add to the difficulty of recruiting better quality personnel. In spite of these restrictions, the site visitors were impressed with the obvious devotion of many technicians to the animals in their charge, and with the dependence of the professional staffs on these people for effective day to day operation of the animal facilities.

In some institutions the decentralized organization of animal care also serves to limit the opportunity for animal technicians to develop comprehensive skills. For example, a technician employed by one investigator to care for mice may have no opportunity to learn about the care of rabbits, even

though both activities may be carried on in close proximity to each other. In this situation it is difficult to promote uniformly high standards and a broad interest in laboratory animal care.

3. Training of animal care personnel.

In some instances inefficiencies in animal care could be attributed to inadequate training of animal care personnel. If there is limited professional competence in an institution's laboratory animal care program, animal technicians cannot be well trained. Proper training is not simply a matter of association of technicians with laboratory animals. It requires systematic presentation of a specific body of information, as well as the acquisition of manual skills. Presently, four of the institutions visited provide formal class room instruction for animal technicians. (Table 5). Most depend on informal instruction on the job to train technicians.

Recently, animal technician training courses have become available through the Technical Guidance Committee of the Institute of Laboratory Animal Resources, and through the Animal Care Panel and its local branches. A technician certification program has been initiated by the Animal Care Panel. Films, books, pamphlets, and even a correspondence course for animal technicians are available. All research institutions should take advantage of these developments as one important means of advancing the training and performance of animal technicians.

Training opportunities in animal care at the professional level also are improving. Postdoctoral training in laboratory animal medicine is available at the Bowman Gray Medical School and at the University of California at Los Angeles. Other institutions are planning similar programs. In several institutions graduate courses are offered in the care and use of animals. It would seem desirable to extend such courses to all institutions which train biologists.

In summary, substantial progress is being made in improving animal care through improved personnel performance. However, not all institutions yet have achieved the best possible standards. There is need for additional professionally trained directors of animal facilities, for better status and salary for animal technicians, for better training of animal care personnel, and for informing administrators of research institutions and investigators themselves of these needs.

Section IV - Buildings, Space and Environmental Controls

Increased emphasis has been given to experimental animal housing in recent years. Nearly half of the 58 institutions constructed new animal facilities in the last ten year period (Table 6); and 70% of these 58 institutions have renovated existing facilities since 1957 (Table 7). Virtually all of the buildings which had not been renovated were constructed after 1955. Despite this construction and renovation activity, the site visits revealed that the majority of these institutions need significant renovation or new construction. This

impression is based on the need for re-surfacing of floors and walls, installation of better ventilation and air conditioning, enlargement of sewer drainage, and reduction of animal population density in some institutions.

Table 8 illustrates the relationship between animal housing space and total research space in 43 institutions. Table 9 shows the relationship of floor space between research and animal housing.

Net floor space for animals ranged from approximately 20,000 sq. ft. in the private laboratories and veterinary schools to 2,600 sq. ft. in the hospitals surveyed. Animal service areas varied from 8,000 sq. ft. in the veterinary schools to approximately 450 sq. ft. in the hospitals surveyed. In the medical schools, private laboratories and hospitals surveyed, the service area is approximately one-fifth of that of the animal rooms, while in the veterinary schools this figure is one-third.

In many instances animal housing was improperly planned. For example, animals were in widely separated locations in some institutions giving rise to inefficient colony operation. Some of these facilities were still not adequate, even where renovation had been attempted.

One of the more serious omissions noted was the general lack of specialized holding areas such as quarantine facilities for incoming animals. Site visitors frequently were informed that these areas were planned originally; but the increased demand for animals had resulted in their sequestration

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and conversion to use as animal maintenance quarters. Shortages of storage space and other service facilities of the animal quarters also were noted. Progress in enlarging animal facilities, while marked over the past few years, has kept up with the demand only by "borrowing" space from areas originally planned for supporting activities. As a direct result these necessary support activities have been slighted in some institutions.

In most instances the animals were clean and well cared for. However, of 57 institutions, 16 had no thermostatically controlled heating system. Of 58 institutions, 21 had air conditioned quarters; but 22 did not and 16 had only a portion of the rooms air conditioned. Table 10 indicates the number of air changes per hour in animal rooms in 49 reporting institutions. Response to questions concerning air handling in the 58 institutions surveyed revealed that air was not recirculated in 74%, was filtered in 56%, and was pressure controlled in 14%.

In the opinion of the site visitors, expenditures for thermostatically controlled heating, air conditioning and air change equipment would be worthwhile investments for a large number of institutions.

Future research will undoubtedly require better control of the laboratory animal environment. Much of the fundamental research on disease problems is now concerned with chronic diseases. Animals used in these programs will have to be maintained for long periods of time. Such animals must be kept free of extraneous diseases. Where the environment is controlled

carefully this objective can more easily be realized.

Considerable progress in estimating the space and environmental requirements of experimental animals has been made in the past few years. Much empirical information has been gathered by surveys of outstanding installations. However, there has been too little scientific research in this area and many of our present practices should be documented. Investigations of these problems should be encouraged specifically; the talents of biological and physical scientists, and those of specialists from architectural and engineering fields should be brought to bear on the problems of the laboratory animal environment.

The Federal government makes significant contributions to animal care in research grants. Long range savings in research grant expenditures for animal care almost certainly could be realized if specific grants were made for the construction and equipping of modern experimental animal facilities where needed. Such facilities should provide for an increase in use of animals during the next several years. In many of the laboratories visited the site visitors noted that old animal quarters have not been vacated when new facilities were completed; but have been continued in use because of the demand for animal housing.

It cannot be emphasized too strongly that the research budgets should include adequate funds for the normal maintenance of animal care facilities. Specific budgeting

consideration should be given to the modernization of these facilities where needed. Institutional administrators frequently underestimate the cost of maintaining animals. Some may include only the initial procurement expense; and fail to take into account the true maintenance costs and depreciation expenses for cages and equipment. Supplemental grants made specifically for these purposes as well as for such items as resurfacing walls and ceilings, and improvement of ventilation and drainage systems would be prime investments.

Section V - Equipment and Materials

Metal is the most widely used material for the construction of cages for animals (Table 11). Ease and thoroughness of cleaning and maintenance as well as the length of useful life are the primary reasons for the use of metal cages. Stainless steel is a desirable metal for cage construction, not only for the aforementioned reasons, but also because of its high resistance to corrosion by animal discharges, detergents, solvents and cleaning compounds. Galvanized metal is the most commonly used metal. The high percentage figure for stainless steel mouse cages, given in Table 11, was strongly influenced by one private laboratory.

The recent introduction of high impact plastics has made available small animal cages having the desirable features of metal cages and at a competitive cost.

Approximately one-half of the institutions visited had post-operative recovery rooms for animals (47%), cage washing

machines (55%), and autoclaves for bedding and equipment (47%). This suggests a need for greater emphasis on providing facilities and equipment, since it is apparent that institutions need them for proper operation of their animal colonies.

Regardless of the physical state of buildings and equipment, the quality of animal care was generally good. In some institutions despite the use of old facilities and equipment, service was adequate because of good management. In contrast, in a very few institutions with superior cages, equipment and quarters, animal odors, poor cleaning, and cluttered rooms merit attention.

Section VI - Disease Control

There was an apparent lack of emphasis on disease control in laboratory animals. Few institutions have adequate quarantine facilities and procedures for newly arrived animals. One can see several reasons why this situation exists. In only a limited number of facilities is there sufficient space for quarantining all incoming animals. Because of ordering procedures there is rarely sufficient time to do so. In rare instances, necropsies are performed routinely for all colony deaths. In the remaining institutions, they were made only upon the request of the investigator. Occasionally, necropsies were performed when the laboratories felt unsure of the cause of death.

A high percentage of the institutions (71%) indicated that they had facilities for the treatment and diagnosis of animal diseases. This figure may well be erroneous, since many institutions included clinical research or diagnostic labora-

tories as representing facilities for the treatment and diagnosis of animal diseases. True, such laboratories might be used for these purposes, but, in practice, seldom were.

Thirty percent of reporting institutions indicated that they were investigating diseases of laboratory animals incidental to their research programs. It was the opinion of the surveyors that many of these projects were in the nature of casual observations on animals rather than research on a particular infectious disease problem.

Movement of laboratory personnel was restricted in part (39%). Although all institutions practiced some form of insect and rodent control, methods of control varied greatly. About 50% employed commercial rodent control firms.

Most of the institutions (84%) required animal care personnel to wear other than street clothing. Most of the clothing (92%) was furnished and laundered by the institutions.

Incineration was the most common method of disposing of animal carcasses and animal refuse, although central collection services were also used.

It would appear that the general attitude toward disease control stems from a concept prevalent in the institutions themselves - that the chief function (and perhaps the only function) of the animal area is as a holding and service area. Most individuals recognize the need for competent management of disease problems once a research project is launched. However,

few seem to appreciate the value of a"preventive medicine" approach. Such an approach should, and would, provide better quality animals; far more than buildings and funds are required to improve laboratory animal care. Medically trained personnel and space and equipment for diagnosis and treatment are also needed.

Section VII - Budget

Of the total number of institutions comprising the field survey group, only 32 gave information sufficient to determine that proportion of the entire research budget utilized in the care of animals. The percent of the total research budget allocated to professional and non-professional salaries, supplies, equipment and operating costs for the animal facility ranged from 1.0% to 33.3% with an average of 6.76%. (Figure 1). The average percentage of research funds available for animal care in 19 medical and dental schools was 5.42, while that for 5 veterinary colleges was 9.31.

The same 32 institutions mentioned above were subjectively rated by the survey consultants as having a generally "good," "fair," or "poor" standard of animal care. Sixteen institutions, under these subjective criteria, rated "good," 11 "fair" and 5 "poor". It is interesting to examine the amounts of the research funds allotted to animal care services in the three categories. For the 16 laboratories considered as "good," the funds available for the animal care service averaged 8.4% of the research budget. The percentage for "fair" institutions averaged 5.3%, while those in the "poor" category spent an amount of the research funds having a mean of 5.0%.

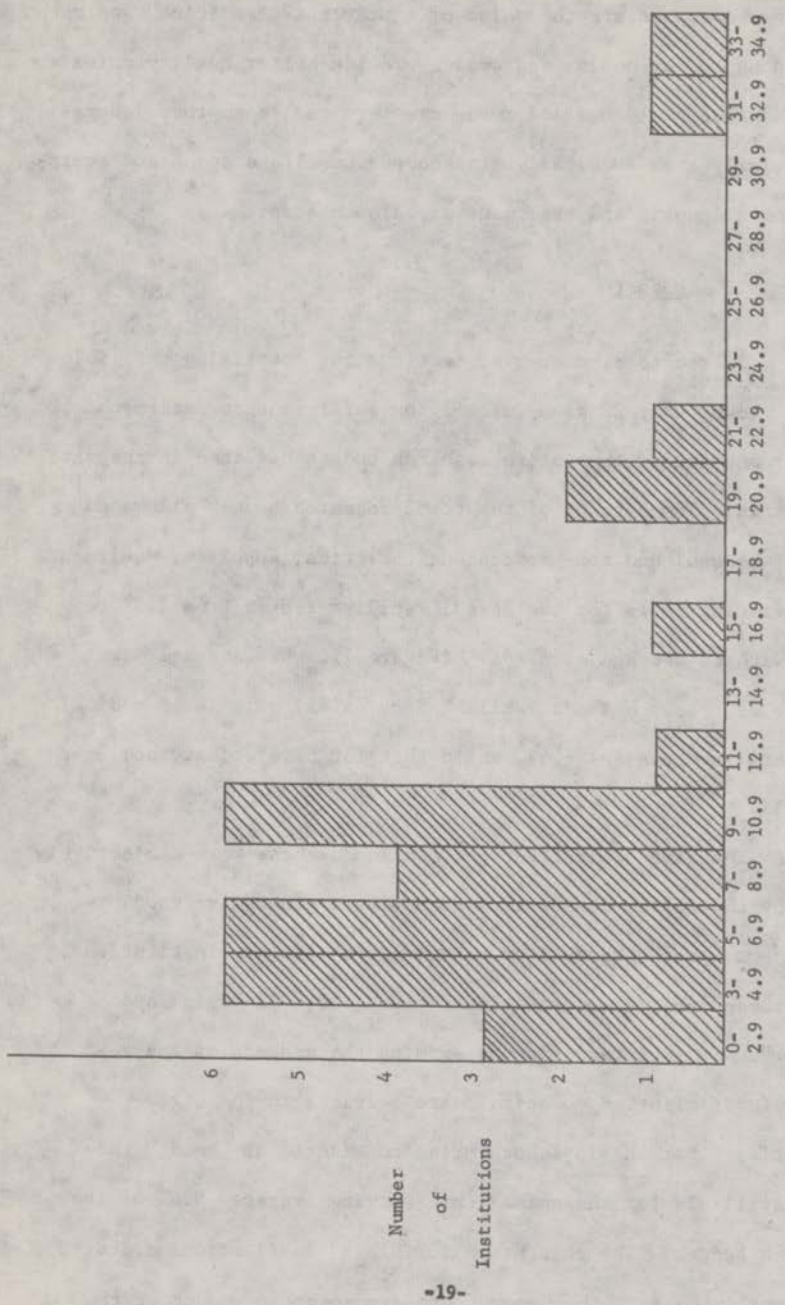


Figure 1. Percent of Total Research Budget Allocated to Animal Care

Actually, the latter figure is probably far smaller than indicated simply because institutions rated as "poor" rarely provided sufficient data on research budgets and animal service costs to allow an accurate determination of the proportion of research monies expended on animal facilities and service. The cost information provided suggested that less money was provided animal care activities in "poor" laboratories than in "fair" or "good" ones.

The question was asked concerning the percentages of the animal care budget which were derived from Federal, institutional, and nongovernmental sources. Thirty-four institutions replied to this inquiry. Taking these establishments as a whole, 40.4% of the monetary resources for animal care were obtained from Federal sources, 44.1% from institutional funds and 15.5% from nongovernmental sources. The percentage of the animal facilities budget obtained from these three funding categories varies markedly with the type of institution. Table 13 shows the different kinds of institutions and the origins of the percentages of their animal care budgets.

Some institutional budget administrators found it impossible to estimate expenditures for animal care. This was particularly apparent at institutions with decentralized animal care programs. Animal care was supported largely by contracts and research grant awards which provided for the purchase of animals, feed, and labor; but covered major overhead expenses such as purchase of equipment, depreciation, and repairs only incompletely. Few of these institutions were able to report their animal care costs accurately. At institutions with a central animal care program, cost records were readily available. The central animal facilities provided the surveyors with the cost figures for animal care,

including labor, animal feed, ancillary supplies, cage depreciation and consummable supplies. Operating funds were derived primarily from charges (per diem) levied against research grants for the care and maintenance of the research animals. The per diem charges were determined by totaling the costs in the categories noted above.

A total of 43 laboratories provided data on annual expenditures for the procurement of laboratory animals. Table 14 summarizes the cost of animals in the five major geographic areas of the United States. Table 15 indicates cost of animals in the different types of institutions.

Section VIII - Unfilled Requirements

Two of the items on the questionnaire concerned unfilled requirements in the areas of personnel and training, and buildings and equipment. Although the responses were difficult to analyze, the following summary seems appropriate.

Eleven (19%) of 58 institutions failed to answer the question of personnel and training. Twenty-six (45%) stated they had no unfilled needs in this area. While this proportion of the total is high, it should be noted that many of these institutions, because of the vagueness of administrative responsibility and the loose budgetary control of animal care activities, probably are not aware of many existing personnel and training requirements. The remaining 21 laboratories (36%) listed a total of twenty-nine personnel and training needs. They can be categorized as follows:

Professional animal care director - 11 (38%)

Additional nonprofessional supervisory personnel	- 2	(7%)
Additional animal caretakers	- 11	(38%)
Personnel manager	- 1	(3%)
Training programs for research staff and animal facility staff	- 4	(14%)

Fifty-five institutions replied to the question on unfilled building and equipment needs. Ten of these (18%) had no construction or equipment problems. The remaining 45 (82%) listed requirements under this section of the questionnaire. Twenty needed new buildings; 7 would like to centralize animal facility operations and space. Thirty-nine of the requisites concerned equipment. The following listing summarizes equipment needs:

Cages	10
Cage racks	2
Cage washing machines	9
Autoclaves	7
Incinerator	1
Germ-free isolators	1
X-ray machines	1
Air conditioning equipment	4
Air filtration equipment	1
Animal disease diagnostic equipment	3

Finally, a total of 60 separate comments concerned needs for animal facility space. The following types of space were noted:

Animal holding space	11

Additional small animal rooms	7
Dog kennels and exercise areas	8
Additional space for breeding of dogs	2
Space for maintenance of pathogen-free animals	3
Experimental dog surgeries	4
Quarantine and animal treatment rooms	10
Space for animal disease diagnosis	3
Remodeling of existing facilities	12

Section IX - Recommendations

The recommendations that follow are based on the findings summarized in this report, and on the opinions of the site visitors regarding the further progress of laboratory animal care.

1. Professional direction of animal care facilities - In an institution providing animal care services on a centralized basis, the administration of this department is best vested in an individual professionally qualified in laboratory animal medicine. In addition to his primary responsibility for directing animal care activities, this person should also serve as a consultant to the professional staff on laboratory animal problems, teach in areas in which he has professional or academic competence, and engage in appropriate research. In academic institutions the director should qualify as a member of the faculty, rather than serve merely as an administrator without academic status. In small institutions this responsibility may, of necessity, be given over to a part-

time professional consultant or to a research investigator experienced in laboratory animal care. The plan outlined in Figure 2 is a summary of the administrative structure considered desirable by the site visitors, based on their visits to 58 institutions. Since this figure is a chart of specific duties, in smaller animal care organizations, the same duties may be partially combined and performed by fewer individuals. Obviously, this schematic arrangement may require adjustment for each institution; however, the basic pattern of the administrative design need not be altered.

2. Advisory committee on animal care - An advisory committee on animal care (or committees on various aspects of animal care) is helpful in advising the Dean or Director of the institution and the animal care department on policy matters, although this need not be the sole area in which advice is rendered by the committee to the head of the institution. This committee should be representative both of the major and minor users of animals. The director of animal care should be a member of this body. The animal care committee should be kept small, if possible. The committee structure provides an equitable method for adjudicating the various departmental needs for equipment and space.

3. Centralization of facilities - Wherever feasible, laboratory animal maintenance colonies and service areas should be physically centralized within a re-

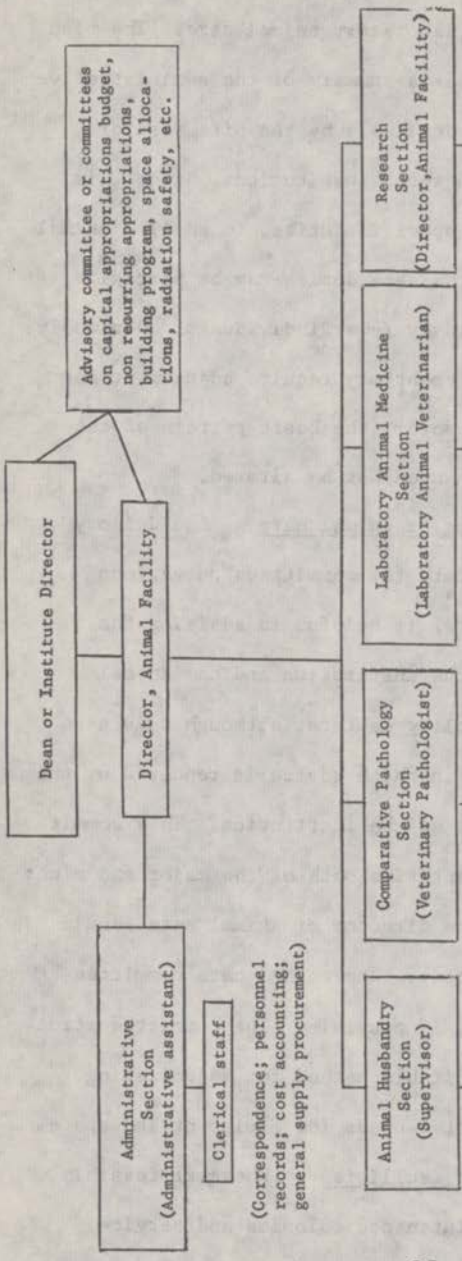


Figure 2. General Plan of Administration for Central Animal Facility

search establishment, and under the administrative control of a professional director. Even where such physical centralization is not possible, central administrative control of the animal colonies may still be feasible. It appears that, as an institution moves toward greater centralization of animal facilities, greater efficiency of operation and an increase in the quality of animal care is obtained.

4. Adequate financial support - An efficient institutional animal care program can be achieved only when adequate financial support is available. Whatever form administration of the animal facilities may take, reasonable budgetary support of these facilities should be provided by the institution, in order to assure a high level of animal care.

5. Provision for maintenance, improvement and replacement - Financial provision should be made for the maintenance and improvement of existing facilities, and for necessary equipment and its replacement.

6. Proper cost accounting - Each institution should maintain financial records to provide an accurate summary of the various costs for the animal care operation. These records should include the costs for equipment, materials and animals, building and equipment depreciation and charges for utilities, as well as the cost of labor and professional assistance.

7. Additional animal holding, quarantine and disease diagnosis and treatment areas - Most of the institutions examined need supplementary space and equipment for the maintenance of animals, their quarantining, and for the diagnosis and treatment of their illnesses.

8. Laboratory animal disease research - The importance of research on laboratory animal diseases in relation to the problems of diagnosis, prevention and treatment cannot be overemphasized. However, the experiences of the site survey teams appear to indicate that much of what is described as investigation into laboratory animal diseases is, in fact, little more than casual observations of animals. Support should be given to the expansion of research into the illnesses of experimental animals.

9. Need for research on environmental controls - A concerted effort should be made to increase the amount and quality of research into the environmental requirements of experimental animals. Such items as humidity, air circulation, air filtration and air conditioning demand increased research before accurate standards for the physical ecology of laboratory animals can be recommended.

10. Construction of animal facilities - In many laboratories, the animal care service is housed in quarters originally planned for other purposes. This has increased both the difficulty and the cost of operating such facilities. Institutions should be

encouraged to design and construct efficient facilities specifically for experimental animal housing. In many instances significant savings in both capital and operating expenses could be realized by the construction of new well planned animal quarters.

11. Renovation or reconstruction of existing facilities - In spite of the need for specifically designed animal facility buildings noted in 10 above, the funds necessary to carry out this recommendation may not become available immediately. However, significant progress in the housing of experimental animals can be made by the renovation or reconstruction of existing facilities.

12. Emphasis on the preventive approach to disease control - The need for additional space for quarantine and disease diagnosis and treatment areas was suggested in 7 above. The availability of such facilities and the necessary trained personnel and equipment would aid the implementation of a preventive approach to the control of enzootics and epizootics which are primary hazards of the animal house.

13. Training opportunities for professional animal care personnel - Even though training at the post-doctorate level in laboratory animal medicine is presently available in two institutions and planned at a few others, the demand for professionally qualified individuals is so great that more academic institutions should consider instituting similar programs for graduate biologists from a variety of disciplines.

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14. Training opportunities for animal technicians - Several training programs for nonprofessional laboratory animal personnel have been offered in the United States. However, these courses are not yet reaching the majority of the persons involved in the day to day operation of experimental animal colonies. The availability of these programs should be increased greatly.

15. Career opportunities for animal technicians - Concomitant with the increased insistence upon training, the vocation of animal technology should be upgraded. The modern "animal technician" is not the old time "laboratory diener" or the modern "janitor." The same prestige accorded those in the field of medical technology should be given to laboratory animal technicians; and their salaries should be commensurate with the knowledge and skills demanded of them.

16. Responsibility of investigators and administrators - These recommendations can be realized only if there is enlightened recognition, by research workers and institutional administrators, of the importance of the care of experimental animals to modern biomedical investigation.

TABLE 1 - TOTAL NUMBER OF ANIMALS USED IN 1960

(57 Institutions)

Mice	2,003,027	Rodents *	670
Rats	516,379	Cattle	582
Rabbits	140,120	Peromyscus	400
Guinea Pigs	88,553	Doves	300
Dogs	61,876	Opposums	228
Poultry	45,789	Alligators	224
Hamsters	33,411	Parrots	150
Frogs	20,142	Crayfish	144
Cats	19,472	Snakes	132
Rhesus Monkeys	7,078	Amphibians*	130
Fertile Eggs*	2,250	Ground Squirrels	102
Sheep	1,999	Lizards	75
Turtles	1,942	Turkeys	50
Goats	1,703	Deer	26
Swine	1,561	Ferrets	25
Other Primates*	1,266	Armadillos	15
Toads	1,200	Racoons	4
Horses	1,052	Mules	3
Reptiles *	833	Elk	2
Pigeons	794	Antelope	2

* Not otherwise designated.

TABLE 2 - NUMBERS OF ANIMALS USED ANNUALLY

(57 Institutions)

		MICE	RATS	HAMSTERS	GUINEA PIGS	RABBITS	RHESUS	OTHER PRIMATES	DOGS	CATS	POULTRY	SWINE*	SHEEP	HORSES
VS-(8)	Total	31,930	11,929	839	8,141	2,478	12	0	6,319	1,318	15,393	1,406	1,856	573
	Avg.	3,991	1,491	105	1,018	310	2	0	790	165	1,924	201	232	72
MS-(36)	Total	983,771	423,112	30,695	71,866	125,951	7,047	760	50,847	17,642	28,070	155	137	1
	Avg.	27,327	11,753	853	1,996	3,499	196	21	1,412	490	780	4	4	0
PL-(5)	Total	925,737	54,844	43	6,147	9,139	15	406	2,216	391	354	0	6	8
	Avg.	185,147	10,969	9	1,229	1,828	3	81	443	78	71	0	1	2
H-(8)	Total	61,589	26,494	1,834	2,399	2,552	4	100	2,494	121	1,972	0	0	0
	Avg.	7,699	3,312	229	300	319	1	13	312	15	247	0	0	0

VS - Veterinary School, MS - Medical or Dental School, PL - Private Laboratory, H - Hospital

Numbers in parenthesis indicate the number of institutions responding.

*In this instance the numbers represent the response of only 7 institutions.

TABLE 3 - SOURCES OF ANIMALS USED BY 55 INSTITUTIONS

(Expressed as percentages)

	Mice	Rats	Hamsters	Guinea Pigs	Rabbits	Rhesus Monkeys	Other Primates	Dogs	Cats	Poultry	Swine	Sheep	Horses
OB	74.9	19.5	17.3	7.7	0.9	5.3	2.4	1.0	0.1	2.2	56.6	10.5	0
PC	24.4	77.0	82.4	92.2	99.0	94.6	42.1	41.0	77.6	93.2	32.5	41.6	79.0
OL	0.7	3.5	0.3	0.1	0.1	0.1	0	0	0	4.6	10.9	47.9	17.8
AP	0	0	0	0	0	0	0	57.9	22.3	0	0	0	3.2
CN	0	0	0	0	0	0	55.5	0	0	0	0	0	0

OB - Own breeding, PC - Purchased commercially, OL - Obtained from other laboratories,
AP - Animal pound, CN - Collected from nature.

TABLE 4 - USES OF LABORATORY ANIMALS IN 55 INSTITUTIONS

(Expressed as percentages)

	Mice	Rats	Hamsters	Guinea Pigs	Rabbits	Rhesus Monkeys	Other Primates	Dogs	Cats	Poultry	Swine	Sheep	Horses
Research	70.0	76.9	94.3	83.6	79.2	98.6	100	76.4	73.2	94.2	75.0	83.2	20.8
Teaching	7.1	20.2	5.2	11.0	19.3	1.3	0	23.5	26.8	4.4	24.2	16.0	74.9
Service	22.9	2.9	0.5	5.4	1.5	0.1	0	0.1	0	1.4	0.8	0.8	4.3

TABLE 5 - TECHNICIAN TRAINING PROGRAMS

Type of Program	Number of Institutions
Formal classroom	4
Informal	38
On the job training	20
Program not described	18
None	15

TABLE 6 - DATES OF ORIGINAL ANIMAL FACILITY CONSTRUCTION

1879 - 1900	4.4%
1901 - 1910	1.8%
1911 - 1920	6.1%
1921 - 1930	13.2%
1931 - 1940	10.5%
1941 - 1950	15.8%
1951 - 1961	48.2%

TABLE 7 - DATES OF MOST RECENT RENOVATION OF ANIMAL FACILITIES

Date of Most Recent Renovation	Percentage of Institutions
No renovation	20.7%
1946	1.9%
1948	1.9%
1953	1.9%
1955	1.9%
1957	1.9%
1958	15.1%
1959	11.3%
1960	30.2%
1961 (First Quarter)	13.2%

TABLE 8 - PERCENTAGE OF TOTAL RESEARCH SPACE OCCUPIED BY ANIMAL HOUSING

Type of Institution		Average Space
6 Veterinary Schools	-	56.8%
26 Medical Schools	-	15.1%
5 Private Laboratories	-	33.6%
6 Hospitals	-	24.2%

TABLE 9 - AVERAGE AMOUNT OF FLOOR SPACE AVAILABLE FOR RESEARCH AND FOR ANIMAL HOUSING (Expressed in square feet)

	Veterinary Schools (8)	Medical & Dental Schools (35)	Private Laboratories (5)	Research Hospitals (8)
Animal Housing	41,870	14,313	29,021	3,316
Research	43,440	73,592	57,057	12,761

TABLE 10 - NUMBER OF AIR CHANGES PER HOUR IN ANIMAL ROOMS (49 Institutions)

Unknown air changes/hour	-	14.3%
0-5 air changes/hour	-	16.3%
6-10 air changes/hour	-	32.7%
11-15 air changes/hour	-	28.6%
16-20 air changes/hour	-	6.1%
21-25 air changes/hour	-	2.0%

TABLE 11 - TYPES OF CAGES USED IN 50 INSTITUTIONS

(Expressed in percentages)

	Mice	Rats	Hamsters	Guinea Pigs	Rabbits	Rhesus Monkeys	Other Primates	Dogs	Cats
Stainless Steel	64.0	33.2	26.0	48.3	34.4	36.8	20.9	19.1	41.0
Galvanized Metal	16.9	63.6	73.2	50.9	56.2	57.6	48.1	54.8	48.8
Plastic	9.6	2.6	0.4	0	0.2	0.1	0	3.2	0
Wood	4.0	0.5	0	0.6	5.4	0	0	1.8	2.1
Other	5.5	0.1	0.4	0.2	3.8	5.5	31.0	21.1	8.1

TABLE 12 - AVERAGE NUMBER OF SURGICAL OPERATIONS PER MONTH BASED ON THE TYPE OF INSTITUTION

Animal	Veterinary School (8)	Medical School (34)	Private Laboratory (4)	Hospital (9)
Dog	82	84	44	62
Cat	15	14	9	3
Primate	0	7	11	0

The numbers in parentheses indicate the number of institutions reporting.

TABLE 13 - SOURCES OF ANIMAL CARE FUNDS

Sources of Funds	MS (21)	VC (6)	PL (3)	H (4)
Federal	58%	23%	28%	24%
Institutional	24%	60%	65%	70%
Non-governmental	18%	17%	7%	6%
Total	100.00%	100.00%	100.00%	100.00%

Figures in parentheses indicate the number of institutions reporting data.

MS - Medical Schools, VC - Veterinary colleges, PL - Private laboratories, H - Hospitals

TABLE 14 - ANNUAL EXPENDITURES FOR ANIMALS BY REGION

	Northeast	Southeast	North Central	South Central	West	Total
Mice	$ 97,590(8)	$ 28,181(6)	$ 43,359(12)	$ 10,603(8)	$ 44,070(8)	$223,803(42)
Rats	126,730(8)	23,536(6)	113,933(12)	21,367(8)	12,969(8)	298,535(42)
Hamsters	24,115(8)	771(6)	5,528(12)	1,098(8)	1,382(7)	32,894(41)
Guinea Pigs	47,166(8)	3,649(6)	19,398(12)	10,567(8)	7,081(7)	87,861(41)
Rabbits	62,260(8)	8,611(6)	53,150(12)	7,980(8)	17,640(9)	149,641(43)
Rhesus Monkeys	28,080(8)	3,680(6)	30,121(12)	27,255(8)	14,020(9)	103,156(43)
Other Primates	900(8)	1,000(6)	1,100(12)	* 50,225(8)	3,129(9)	56,354(43)
Dogs	69,182(8)	13,806(6)	77,195(12)	18,657(8)	25,881(9)	204,721(43)
Cats	8,228(8)	993(6)	17,214(12)	1,587(8)	8,284(9)	36,306(43)
Poultry	5,823(8)	219(6)	2,084(12)	686(8)	3,077(9)	11,889(43)
Swine	200(8)	200(6)	3,485(12)	1,150(8)	692(8)	5,727(42)
Sheep	650(8)	620(6)	2,634(12)	865(8)	6,650(8)	11,419(42)
Horses	0(8)	591(6)	3,247(12)	1,350(8)	2,730(7)	7,918(41)
Grand Total	$470,924	$ 85,857	$372,448	$153,390	$147,605	$1,230,224

Numbers in parentheses indicate the number of institutions furnishing information.
* $50,000 of this amount spent by one laboratory.

TABLE 15 - ANNUAL COSTS FOR ANIMALS BY KIND OF INSTITUTION

	M.S.	V.C.	P.L.	H.	Total
Mice	$174,933(25)	$ 2,869(7)	$ 37,389(5)	$ 8,612(5)	$ 223,803(42)
Rats	260,532(25)	2,305(7)	32,168(5)	3,530(5)	298,535(42)
Hamsters	28,904(25)	3,662(7)	28(5)	300(4)	32,894(41)
Guinea Pigs	* 77,179(25)	1,986(7)	7,194(5)	1,502(4)	87,861(41)
Rabbits	* 136,895(26)	2,528(7)	6,000(5)	4,218(5)	149,641(43)
Rhesus Monkeys	99,782(26)	500(7)	1,020(5)	1,854(5)	103,156(43)
Other Primates	2,954(26)	0(7)	** 51,100(5)	2,300(5)	56,354(43)
Dogs	168,631(26)	9,361(7)	12,219(5)	14,510(5)	204,721(43)
Cats	34,148(26)	595(7)	1,079(5)	484(5)	36,306(43)
Poultry	7,614(26)	1,484(7)	171(5)	2,620(5)	11,889(43)
Swine	602(26)	5,125(7)	0(5)	0(4)	5,727(42)
Sheep	2,500(26)	8,879(7)	40(5)	0(4)	11,419(42)
Horses	0(25)	7,918(7)	0(5)	0(4)	7,918(41)
Total	$994,674	$47,212	$148,408	$39,930	$1,230,224

Figures in parentheses show the numbers of laboratories reporting data.
MS - Medical and Dental Schools, VC - Veterinary Colleges, PL - Private laboratories, H - Research Hospitals.

* Probably many animals used for diagnostic purposes were included here.
** $50,000 of this sum spent by one laboratory.

APPENDIX I.

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
Institute of Laboratory Animal Resources

SURVEY OF ANIMAL FACILITIES IN MEDICAL RESEARCH

Questionnaire

Name of Institution Surveyed_____ Date_____

_____

Address_____

_____

Name of Cooperating Official(s)_____

Title(s)_____

Name(s) of Affiliated Institutions included in Survey_____

_____

Section I. ADMINISTRATION

1. How are your animal facilities organized administratively?_____

_____

Section II. PHYSICAL FACILITIES AND ANIMAL USAGE

1-a) List the number of animals used from July 1,1959 to June 30, 1960.

Species	Daily Census		Annual Use
	Average	Maximum	
Mice			
Rats			
Hamsters			
Guinea Pigs			
Rabbits			
Rhesus Monkeys			
Other Primates			
Dogs			
Cats			
Poultry			
Swine			
Sheep			
Horses			
TOTAL			

1-b) Source of this information: Institutional records ☐, Approximation ☐

2-a) List the approximate percentages of animals used annually in the various categories

Species	Use Categories		
	Research	Teaching	Service
Mice			
Rats			
Hamsters			
Guinea Pigs			
Rabbits			
Rhesus Monkeys			
Other Primates			
Dogs			
Cats			
Poultry			
Swine			
Sheep			
Horses			

2-b) Source of this information:
Institutional records ☐ Approximation ☐

3-a) Source of animals. (Please indicate numbers)

Species	Own breeding	Purchased commercially	Obtained from other laboratory	Animal pound	Collected from nature
Mice					
Rats					
Hamsters					
Guinea Pigs					
Rabbits					
Rhesus Monkeys					
Other Primates					
Dogs					
Cats					
Poultry					
Swine					
Sheep					
Horses					

3-b) Source of this information:
Institutional records ☐ Approximation ☐

Section II A. BUILDINGS

1. Are the animal facilities all in one building or dispersed?_____

Please describe:_____

2a) Date building(s) housing animal facilities was originally constructed?_____

2b) Date of most recent renovation or addition._____

Describe:_____

3. What materials were used in constructing the animal quarters (indicate below)?
   Exterior walls?_____
   Interior walls?_____
   Ceilings?_____
   Floors?_____
   Floor covering?_____

4. Net* amount of floor space available for animal housing.

Area	Net* Space Available
a. Animal rooms	
b. Animal service areas (e.g., cage cleaning, feed and bedding storage)	
c. Outdoor housing	
d. Farm animal facilities	
e. Animal space contracted for outside research institutions	

* Calculate from interior dimensions of rooms.

5. What is the total net research space (excluding item 4)?_____

6. How are the animal rooms heated?_____

7. Are the rooms thermostatically controlled, and at what temperature?_____

8. Are the rooms air-conditioned, and humidity controlled?_____

   Number of air changes per hour?_____

   Is the air re-circulated?_____

9. Do the rooms have air pressure controls?_____

10. Do the animal rooms have ventilating fans?_____

11. Is the incoming air filtered in the animal rooms?_____
How?_____

12. Are floor drains present?_____
In what areas?_____

13. What methods are used in lighting the animal rooms?_____

14. Is there an emergency power source available?_____
If so, please describe:_____

15. Are germicidal lamps used in the animal rooms?_____

15. Do the animal rooms have sinks?_____
Are these sinks equipped with dispensers for towels, soap, detergent and bactericide?_____

Section II B. EQUIPMENT AND MATERIALS

1. Number of cages:

Species	Stainless	Galvanized	Plastic	Wood	Other
Mice					
Rats					
Hamsters					
Guinea Pigs					
Rabbits					
Rhesus Monkeys					
Other Primates					
Dogs					
Cats					

2. Describe the type of construction for racks holding animal cages.

3. Are there washing machines for animal ca es and equipment?_____

What type (rotary, tunnel, etc.)?_____

4. Are there large autoclaves for cages, food and bedding?_____

Number of them?_____
Type and load capacity?_____

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5. Are there facilities for the diagnosis and treatment of animal diseases?

Please elaborate:

6. List the number of operations performed each month, by species:

Species	Number of operations
Dogs	
Cats	
Primates	

7. Is there a post-operative recovery room available for animals?

8. List the type of feed used,by species (e.g.,pellets,mash,biscuits,vegetables).

Species	Feed
Mice	
Rats	
Hamsters	
Guinea Pigs	
Rabbits	
Rhesus Monkeys	
Other Primates	
Dogs	
Cats	
Poultry	
Swine	
Sheep	
Horses	

9. List the type of bedding or litter used, by species.

Species	Bedding Material
Mice	
Rats	
Hamsters	
Guinea Pigs	
Rabbits	
Dogs	
Cats	
Rhesus Monkeys	
Other Primates	
Poultry	
Swine	
Sheep	
Horses	

10. Please list animal facility buildings and equipment which are planned and funded:_____

11. Please list unfilled requirements for buildings and equipment for which funds do not now exist:_____

Section III. DISEASE CONTROL

1. Do employees wear special clothing (describe)?_____

   If so, is this clothing provided by institution ☐ individual ☐

2. How is clothing laundered?_____
   By institution ☐ By individual ☐

3. What special washing or showering requirements exist for personnel?_____

4. Are the animal technicians (excluding supervisory personnel) generally restricted in their movement to particular rooms?_____

5. How often and by what means are the following areas and pieces of equipment cleaned?

Area or equipment	How often cleaned?	With what or in what manner?
Animal room floors		
Corridors		
Walls		
Water bottles (small animals)		
Water bowls (large animals)		
Small animal cages		
Large animal cages		
Feeding dishes		

6. Describe briefly the methods, equipment and chemicals used in rodent and insect control:_____

7. Describe quarantine procedures for new animals (by species) including special examinations and immunizations:_____

8. Are periodic diagnostic tests made of samples of the colony (describe)?

9. Are autopsies performed for all deaths in the colony?

10. How are animal carcasses disposed of?

11. How are soiled bedding and food disposed of?

12. Is research on laboratory animal diseases performed in this facility?
    If so, list research projects:

13. How are prepared feeds and bedding stored?

14. Are visitors allowed in the rooms where animals are kept or where experimentation or surgery is performed?

15. Are visitors encouraged to visit the animal facility?

Section IV. PERSONNEL

1. Please complete the following table concerning animal care personnel having supervisory responsibilities:

Name	Title	Education	Nature of animal care experience or special training	Responsible to whom	Prof.affiliation in animal care field	Full or Part-time (hours)

2. Number of junior animal technicians (caretakers) employed full time?_____

Number of senior animal technicians (caretakers) employed full time?_____

Number of supervisory animal technicians (caretakers) employed full time?_____

3. Number of junior animal technicians (caretakers) employed part time?_____

Number of senior animal technicians (caretakers) employed part time?_____

Number of supervisory animal technicians (caretakers) employed part time?_____

4. Describe work schedule for animal technicians (caretakers):_____

5. Is there a formal training course in the institution for new animal technicians (caretakers)?_____

Describe:_____

6. Is there an informal training course in the institution for new animal technicians (caretakers)?_____

Describe:_____

7. Are animal technicians (caretakers) required to take training courses offered by local groups?_____

8. Are animal technicians (caretakers) urged to take training courses offered by local groups?_____

9. Please list current and unfilled requirements for personnel and training.

Section V. BUDGET

1. Annual cost for animal care.

Salaries and wages (including insurance,FICA,etc.)
Professional _____
Non-professional_____
Supplies and equipment (e.g.,feed,bedding,animals,etc.)_____
Operating costs (e.g.,lights,heat,telephone,etc.)_____
TOTAL _____

2. What percentage of the total research budget is used for animal care?

3. What percentage of the total budget for animal care is derived from:
Federal funds?_____
Institutional funds?_____
Non-governmental sources?_____

4. List the total amount spent during the last budget year for the purchase of animals, by species

Species	Annual Cost
Mice	
Rats	
Hamsters	
Guinea Pigs	
Rabbits	
Rhesus Monkeys	
Other Primates	
Dogs	
Cats	
Poultry	
Swine	
Sheep	
Horses	

APPENDIX II.

INSTITUTIONS SURVEYED BY SITE VISIT

Northeast

New York State Veterinary College
Columbia University College of Physicians and Surgeons
University of Pittsburgh School of Medicine
New York University Medical Center
University of Pittsburgh Dental School
Mellon Institute
Montefiore Hospital
Yale University School of Medicine
Roscoe B. Jackson Memorial Laboratory
Martland Medical Center

Southeast

Howard University School of Medicine
Georgetown University Schools of Medicine and Dentistry
University of Florida J. Hillis Miller Health Center
University of Louisville School of Medicine
University of North Carolina Medical School
Johns Hopkins University School of Medicine
University of Maryland School of Medicine
University of Kentucky Medical Center
University of West Virginia Medical Center
Auburn University School of Veterinary Medicine

North Central

University of Wisconsin School of Medicine
Western Reserve University Medical School
Purdue University School of Veterinary Science and Medicine
University of Michigan Medical School
University of Nebraska College of Medicine
Northwestern University Medical School
Michigan State University School of Veterinary Medicine
Mayo Clinic
The Henry Ford Hospital
Marquette University Medical School
The Ohio State University School of Veterinary Medicine
University of Illinois Chicago Professional Colleges
(School of Medicine)

APPENDIX II - Continued

South Central

Washington University School of Medicine
Oklahoma University School of Medicine
Louisiana State University School of Medicine
University of Texas Medical Branch
Baylor University College of Medicine
Kansas State University Veterinary School
University of Missouri School of Veterinary Medicine
Southwest Foundation for Research and Education
M. D. Anderson Hospital and Tumor Institute
St. Francis Hospital
University of Missouri School of Medicine

West

Stanford Research Institute
Mt. Zion Hospital and Medical Center
University of Washington Medical School
King County Hospital
University of Oregon Medical School
University of Southern California School of Medicine
Institute of Medical Research, Cedars of Lebanon Hospital
University of Utah College of Medicine
University of Colorado School of Medicine
Colorado State University College of Veterinary Medicine
University of California Departments of Bacteriology, Psychology and Zoology
University of Oregon Dental School
University of Southern California School of Dentistry
University of California Medical Center
Stanford Medical School

APPENDIX III.

REGIONAL SITE SURVEYORS

Northeast

George A. Bjotvedt, VMD, Director, Division of Laboratory Animal Medicine
University of Pennsylvania School of Medicine, Philadelphia, Pennsylv

Bernard F. Trum, DVM, Director, Animal Research Center, Harvard Medical Schoo
Boston, Massachusetts

Southeast

Thomas B. Clarkson, Jr., DVM, Director of the Vivarium,
Bowman-Gray School of Medicine, Winston-Salem, North Carolina

George A. Elliott, DVM, Assistant Professor of Comparative Pathology,
Vanderbilt University School of Medicine, Nashville, Tennessee

North Central

William C. Dolowy, DVM, MS, Administrator, Medical Research Laboratory,
University of Illinois School of Medicine, Chicago, Illinois

B. B. Hancock, DVM, Ph.D., Director of Production, American Scientific
Laboratories, Inc., Madison, Wisconsin

South Central

J. E. G. Artecona, DVM, Director, Research Department, University of Texas
Dental Branch, Houston, Texas

C. J. Shepler, Jr., DVM, Houston, Texas

West

Bennett J. Cohen, DVM, Ph.D., Director, Office of Animal Care,
University of California Medical Center, Los Angeles, California

Orland A. Soave, DVM, Director, Animal Facility, Stanford University
Medical School, Palo Alto, California

Dr. THORP. In closing, Mr. Chairman, I would like to point out to members of this committee that I have in the past 4 years participated in about 160 project site visits to institutions of all types. This was part of my duties as a member of the National Advisory Health Research Facilities Council of the Public Health Service. This council is responsible for awarding matching grants for health related research facilities to medical and biological research institutions.

It has been my observation that there has been a marked improvement in the animal facilities due to this building program, as many of these grants include modern, up-to-date animal facilities.

In final summary I would like to make several points. The legislation proposed here would permit an unwanted encroachment upon research workers' freedom in conducting research. This legislation would require expensive, massive and a totally unnecessary laboratory machinery. This legislation would delay the testing of new concepts and ideas. Witness the thalidomide situation. It would hinder and restrict medical and biological research, retarding our progress; that the object of the humane use of laboratory animals in the best interest of man and animals can be obtained by making funds available to further study the needs of laboratory animal care by encouraging serious research of a high level on these problems.

Veterinarians are employed by many medical centers in the field of animal care.

I am sure that the committee will give every consideration to this survey report that I have presented to you which is based upon my observations and experience.

Thank you.

Mr. ROBERTS. Thank you, Dr. Thorp.

I believe you mentioned a survey team as having compiled this report, finalizing it in May of 1962 of this year.

Dr. THORP. Yes. The list of the survey team is on the back page of the report.

Mr. ROBERTS. Let me ask you this: How many schools and laboratories did the team visit, approximately?

Dr. THORP. A total of 58 were actually visited. The next report, will include the mailing of questionnaires, based on about 500.

Mr. ROBERTS. Do you think that there has been a good many instances of cruelty and inadequate care and improper buildings and facilities for animals used for research?

Dr. THORP. It is my impression from the opinions of the visiting teams that there was no evidence of cruelty. True, you will have different qualities, good, fair, poor, and so forth, in various institutions, as pointed out, dependent upon their support.

Mr. ROBERTS. Are most of these institutions visited recipients of Government grants in one form or another, project grants, institutional grants, building grants?

Dr. THORP. I would say that most of these institutions have received project grants. Some of the institutions undoubtedly have received building grants. You might break down the institutions that were visited, and there would be 8 veterinary schools, 35 medical and dental schools, 5 laboratories, foundation laboratories, and 8 research hospitals. I believe all of these would have received some project grant money.

Mr. ROBERTS. I notice from just a quick reading—I haven't had time to read the survey—that you do make a statement in section 6 on page 16 that—

there was an apparent lack of emphasis on disease control in laboratory animals. Few institutions have adequate quarantine facilities and procedures for newly arrived animals.

Has there been any effort to improve that situation?

Dr. THORP. It has been my observation that the newer facilities that have come to my attention in connection with the research facilities program of matching money for facilities, that in most of these, there is an expansion of the animal facilities. I think the problem here is that animal facilities as far as the quarantine is concerned have been used for research, and the other reason is that the source of animals commercially nowadays is pretty good in all areas of the country. And in some instances in some species this matter of quarrantine is not as important as it is in others. But it has been my observation that as the research facilities program goes along and improves facilities, that this will be eventually taken care of.

Mr. ROBERTS. Would you care to comment on the training of animal care personnel?

Dr. THORP. It would be my opinion that this is very important to our whole research program. The ultimate supervision of the animal care people should be of a professional type. The really actual care that takes place is done by the animal caretaker or the animal technician. And that is why I said in my brief remarks that I felt somewhere in our program there should be some means of training these people. There are some training programs in our larger medical centers. I think this is a sort of thing that should be expanded. There are two programs, one at UCLA in Los Angeles, and one at Bowman Gray Medical Center, training programs supported by the National Institutes of Health on a professional level for a veterinarian to go on and receive training in animal care. There are training programs carried out by local animal care panel groups in New York and San Francisco and in other areas where there is a medical center. But I think this is something that needs some support.

Mr. ROBERTS. I believe on page 8 you have a page devoted to professional direction of animal care activities. Would you care to comment on that?

Dr. THORP. Well, it has been my opinion that in those institutions where they have had professionals directing the animal facilities, as dean of a college of veterinary medicine, I know that in a number of these institutions they have veterinarians that have obtained experience in this area, and where you have them I think you are going to have a high order of animal care, you reach that goal much quicker if you have a full-time professional individual devoting the time to this.

Mr. ROBERTS. The reason I mentioned that, I note in the first sentence you state that "11 of 58 institutions have organized their animal facilities under full-time professional direction," which would be a rather low percentage, it would seem to me, that have any professional direction.

Dr. THORP. I would like to comment on that. In 11 of the 58 you have, I believe, a central animal facility with a director carrying on

the professional direction. However, in many of your medical institutions a professional individual in a department of the college of medicine or veterinary school will assume the responsibility for that department. So it is a matter of organization. The 11 refers to a central animal facility. So it doesn't mean that you do not have some professional service in the others. It is a matter of organization in the institutions.

Mr. ROBERTS. I note too one statement that is a useful bit of evidence to me, where you state "in most institutions animal facilities must be shared by many research workers." It would seem to me that that would certainly indicate, as you say, the problems of disease control, the utilization of space and personnel and other related problems.

Dr. THORP. It does in some institutions.

Mr. ROBERTS. Thank you very much, Dr. Thorp.

Mr. Nelsen.

Mr. NELSEN. I wish to add my thanks to Dr. Thorp for his testimony. And I note throughout this report that wherever there is some deficiencies in the care—for instance, the example dealing with the report that you have just referred to as to professional direction—that you sum it up by saying that you should consider full-time direction of our animal programs, in other words, we are moving in the direction that I think everybody wants to go. And it seems to me that this report is a very good report, Mr. Chairman. And I am pleased that Dr. Thorp has added it to the testimony today.

I might add, Dr. Thorp, that, as you know, I was the author of the bill that created the College of Veterinary Medicine at the University of Minnesota and Dr. Boyd was the first to take over, and you succeeded him. And I am pleased that we can meet here in this committee room and hear your testimony. I am glad that you came.

And I believe that you have an associate here that we hear next.

Dr. THORP. Thank you very much for your comments.

And we have Dr. Visscher, professor of physiology in the University of Minnesota.

STATEMENT OF MAURICE B. VISSCHER, PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF MINNESOTA

Dr. VISSCHER. Mr. Chairman, I am here in several capacities: One, to represent the American Physiological Society, which is the organization of one of the largest groups of scientists in the United States and which is concerned with problems of animal care and animal use. And if I may, I should like to leave with you a copy of a prepared statement which I shall not read for the sake of conserving time. And in addition I would like to give you a few points. And if you care to ask additional questions, I would be very happy to answer them.

(The prepared statement referred to follows:)

TESTIMONY OF MAURICE B. VISSCHER, PH. D., M.D.,[1] REGARDING H.R. 3556 AND H.R. 1937

I have been engaged in scientific research and teaching involving the use of experimental animals for 40 years in the United States and England. In England, there was an elaborate law regulating animal experimentation. I can testify to the fact that the general level of attention to the welfare of experimental animals is at least as great in the United States where there are no special regulatory laws at the Federal level as in Great Britain. There is no objective evidence that the British law has improved the care of experimental animals over the situation in the United States. To the contrary, there is much evidence that the redtape and the regulations have impeded scientific, especially medical scientific, progress. It is not being jingoistic to point out that the great advances in surgery in our time, for example open heart surgery, have come from America and not from Britain. If H.R. 3556 or H.R. 1937 were enacted into law, it may be predicted with confidence that the quality of American surgery would decline. It happens that several of the innovators of open heart surgery were graduate students in my laboratories. C. Walton Lillehei, Richard H. Varco, and Clarence Dennis were among this group. The provisions of the above-mentioned bills would certainly have impeded, and might even have prevented them from doing their work. Both of these bills stipulate (H.R. 3556, sec. 12(g) and H.R. 1937, sec. 4(f)) that animals employed in practice surgery must be killed before coming out of anesthesia. It is patently absurd to expect a student surgeon to be able to learn surgery if he cannot ascertain whether his patient will be able to survive the surgical procedures. We have all heard the old sour joke about the operation being a success while the patient died. We in the United States do not want to have our young surgeons acquire their skills at the expense of human death or damage.

To substantiate my statement that the British Laboratory Animals Act of 1876 has been an impediment to the progress of medical and other science I wish to read into the record as appendix A relevant excerpts of a personal letter to me from one of Britain's outstanding medical scientists, the Nobel Laureate, Lord Adrian. He states that Britain has "certainly been a good deal behind other countries" in certain fields of work of great importance to human welfare. He further says that current standards of animal care are not different in the United Kingdom and the United States of America. Obviously, this must be due to the fact that in the United States of America the humane standards of scientists themselves are at least as influential in promoting high standards of care as any laws would be.

I wish to make it very plain that I oppose the Griffiths and Moulder bills, not on the grounds of any personal or professional aversion to proper laws regarding humane treatment of animals, but rather because these bills are contrary to the general public interest in that they will impede teaching and research in biological science including medicine, and because they would be entirely futile as to the promotion of humane treatment of animals.

It happens that in 1949 I had a part in the drafting and presentation to the Legislature of the State of Minnesota the first State act regulating the disposal and use of unclaimed impounded animals for scientific research. A copy of this act as amended is attached as appendix B. I wish to call special attention to the fact that scientists have played a major role in obtaining the passage of similar acts in many other States and that these acts specifically provide for State regulation and inspection of facilities for and methods of caring for experimental animals. Scientists are in entire agreement that the lawful use of animals in research and teaching should be limited to institutions which have proper facilities and personnel for their humane care. We prefer State to Federal control of such regulation and inspection, partly for reasons of economy. In Minnesota, the State livestock sanitary board, which deals with all other regulation of animal care, deals with facilities for animal experimentation as part

[1] Distinguished service professor and head of the Department of Physiology, University of Minnesota. Member: U.S. National Academy of Sciences, Minnesota Society for the Prevention of Cruelty. Offices held: president of the general assembly of the Council of International Organizations of Medical Sciences; secretary general of the International Union of Physiological Sciences; president of the American Physiological Society.

of its functions. We believe that this type of board is in the best possible position to perform this function economically and properly.

I strongly approve of laws promoting the humane treatment of all animals. Cruelty to animals is a crime and should be punished whether the culprit is a pet owner, a farmer, a trucker, or a scientist. The most effective measures to promote the humane treatment of experimental animals are those which American scientists have already adopted and used; namely, careful education of all animal attendants and students in the proper care of animals and State control of laboratory certification for receiving pound animals.

In summary, H.R. 3556 and H.R. 1937, each in different ways, would put improper restrictions on teaching, would load investigators with mountains of paperwork, would add greatly to the cost of the medical research enterprise, would impede our national defense research programs in biology and medicine, would discourage innovations in biology and medicine generally. The hoped for gains in improved care of laboratory animals would not be achieved by the bills in question. If the Congress wishes to make real improvements in laboratory animal housing and care, the scientific community stands willing and ready to offer realistic constructive proposals. We are ready to work with the Congress in pointing out how genuine progress can be made. Specifically, we call for more construction and equipment funds for animal housing as well as for funds for training of animal care personnel and for research in animal nutrition and care.

APPENDIX A

QUOTATION FROM LORD ADRIAN (WRITTEN FEBRUARY 7, 1961), MASTER OF TRINITY COLLEGE, CAMBRIDGE, ENGLAND, NOBEL LAUREATE IN PHYSIOLOGY AND MEDICINE, NOTED AS A NEUROPHYSIOLOGIST

* * * Our system certainly protects us from antivivisection agitation. It does not make it possible for stray cats and dogs to be used for experimental purposes: We have to rely on dealers and have sometimes had trouble because we have had no check on their source of supply. I do not think we have been unduly hampered by the formalities needed for getting foreign students licensed and seeing that they follow the regulations, and we are on good terms with the inspectors who turn up occasionally from the Home Office. In fact their criticism about animal houses, etc., is sometimes a good lever for getting improvements agreed to by the university or hospital concerned.

On the other hand I do feel that state regulation, based on an act which dates from the last century, has made us rather unenterprising. When there is some doubt whether a particular kind of research or class experiment needs special certificates, etc., my own tendency has been to give up the idea and stick to what I know to be allowable. We have certainly been a good deal behind other countries in work on the central nervous system in the past 30 years. One can think of various reasons for that, but work such as Bremer's would have been difficult to carry out without considerable argument, although for all I know it may be sanctioned nowadays. Clearly it depends on the temperament of the research worker whether he will be put off by the need to get sanction for the sort of experiment which does not seem to be covered by the regulations; and I expect enterprising neurologists would not have been inhibited.

I should say that the standard of treatment of animals used for experiments is much the same in the United States of America as here, for that reason I do not think state licensing of the kind contemplated can make much difference to the welfare of the animals in the United States of America.

APPENDIX B

CHAPTER 195 OF THE SESSION OF THE LAWS OF THE 1949 LEGISLATURE

AN ACT To promote scientific research and instruction in animal and public health by making available to educational and scientific institutions, unclaimed and unredeemed animals impounded by public authority in animal pounds; to provide licenses therefor and penalties for violations thereof

Be it enacted by the Legislature of the State of Minnesota:

SECTION 1. As used in this act, "institution" means any school or college of agriculture, veterinary medicine, pharmacy, dentistry, or other educational or scientific establishment properly concerned with the investigation of, or instruction concerning the structure or functions of living organisms, the cause, prevention, control or cure of diseases or abnormal conditions of human beings or animals.

SEC. 2. Such institutions may apply to the board for a license to obtain animals from establishments as defined in Section 3. If after investigation, the board finds that the institution making request for license is a fit and proper agency within the meaning of this section, to receive a license, and that the public interest will be served thereby, it may issue a license to such institution authorizing it to obtain animals hereunder, subject to the restrictions and limitations herein provided.

SEC. 3. "Establishment" shall include any public or private agency, person, society or corporation having custody of animals which are seized under authority of the State or any political subdivision of the State. All animals seized by public authority shall be held for redemption by the owner for a period not less than five days or for such other minimum period of time as may be specified by municipal ordinance. At the end of this period all animals which remain unclaimed and unredeemed by their owners or by any other person entitled to do so shall be made available to any institution licensed hereunder which has submitted a prior request therefor in such numbers as the institution requests. If a request is made by a licensed institution to such establishment for a larger number of animals than are available at the time of such request, the establishment shall withhold thereafter from destruction, all unclaimed and unredeemed animals until the request has been filled, provided that the actual expense of holding animals beyond the time of notice to such institution of their availability, shall be borne by the institution receiving them. Any establishment which fails or refuses to comply with these provisions shall become immediately ineligible for any further public funds from any County or municipality. Upon receipt of a sworn statement by an authorized officer or employee of any institution licensed hereunder of noncompliance by any establishment with these provisions, it shall be unlawful for the treasurer of any municipality or other political subdivision of the state to pay any public funds to such establishment until the complainant withdraws its statement of noncompliance or until the State Livestock Sanitary Board shall either determine that the complaint of noncompliance was without foundation or that the establishment has given adequate assurance of future compliance, and the treasurer of such municipality or other political subdivision has been notified of such determination in writing. If it appears upon the complaint of any person that any officer, agent, or employee of such establishment is violating or failing to carry out the provisions of this section, the Attorney General or County Attorney of the County in which the establishment is located, in addition to any other remedies, may bring an action in the name of the State of Minnesota against any such establishment, officer, agent or employee thereof to enjoin compliance with this section.

SEC. 4. The licensed institution shall provide, at its own expense, for the transportation of such animals from the establishment to the institution and shall use them only in the conduct of its scientific and educational activities and for no other purpose.

SEC. 5. Each institution licensed under this act shall pay an annual license fee of fifty dollars for each calendar year, or part thereof, to the State Live Stock Sanitary Board. All such license fees shall be deposited in the general revenue fund of the State of Minnesota.

SEC. 6. The State Live Stock Sanitary Board upon fifteen days' written notice and an opportunity to be heard, may revoke the license granted any institution (1) if the institution has violated any provisions of this act, or (2) has failed to comply with the conditions required by the State Live Stock Sanitary Board in respect to the issuance of such license.

SEC. 7. The State Live Stock Sanitary Board shall have the power to adopt such rules and regulations, not inconsistent with this act, as may be necessary to carry out the provisions of this act, and shall have the right whenever it deems advisable, or in the public interest, to inspect or investigate any institution which has applied for a license or has been granted a license hereunder.

SEC. 8. It shall be a misdemeanor for any person or corporation to violate any of the provisions of this act.

Dr. VISSCHER. I would like to point out that it is necessary to distinguish between the care and maintenance of animals and facilities for such care and maintenance, and the actual scientific use of the animals. And there can be an important distinction between inspection procedures which have to do with ascertaining whether there are

adequate facilities for the housing and care of animals, whether there is adequate personnel for their maintenance, and other types of control which would have to do with regulating types of experimentation, types of use to which animals might be put.

I think that in the hearings thus far the distinction has not been made plain. And I believe that you will find as you go through the document that I have left with you that the scientists throughout this country, biological scientists, have not opposed but have promoted—as in the Dog Pound Act of the State of Minnesota, passed in 1949—inspection and actual certification of laboratories as suitable for experimental purposes.

Mr. ROBERTS. Doctor, have any other States enacted similar legislation?

Dr. VISSCHER. Yes, there are seven or eight other States which have enacted similar legislation. I think that the document that will be given to you names the States and also municipalities, and if I am not mistaken the District of Columbia falls in the same category. In other words, we are not without some regulatory procedures with regard to control of the quality of facilities.

We are, however, very much concerned with improving the facilities that can be made available for the care of the increasing numbers of animals that are going to be used in biological and particularly medical investigations in the future.

There has been a very large increase, as has been pointed out earlier today, in the funds available for such research, which has made increasing volume of facilities necessary. And concomitant with this it has been necessary to train large numbers of additional workers. And every scientist who will testfy before you—although I predict that the majority of them will oppose the bills that are being considered today—every scientist will favor moves in the direction of improving the quality of care and adequacy of facilities.

If I may, I should like to read into the record something which is not in my mimeographed testimony, the resolution of the American Physiological Society passed at its annual meeting last year after the introduction of these bills—passed, if I am not mistaken, unanimously:

> The American Physiological Society urges the Congress to defeat H.R. 1937 and H.R. 3556. The members of the American Physiological Society are deeply sympathetic with measures designed to assure humane treatment of laboratory animals, and they continue to work as scientists and through their professional organizations to maintain humane standards. We believe that the provisions of these two bills would tremendously increase the administrative work of scientists, and while increasing the cost, would reduce the ability of scientists to do productive research and effective teaching. We believe that the object of humane use of laboratory animals in the best interests of both man and animals can be obtained by making funds available to improve housing and care of animals needed for research and teaching. Therefore we urge that the Congress, by a joint resolution of the Senate and House of Representatives, encourage the use of existing funds for improving animal facilities and care, and leave the maintenance of standards to the scientists, the universities, and local and State authorities.

I also wish to point out that although we have heard from some of our British colleagues that there is no great objection to the 1876 act of Parliament which regulates animal experimentation in Britain, at the present time there is no agreement among British scientists that the introduction of such measures into the United States would

be advantageous. I should like to quote just one sentence from a letter to me from Lord Adrian, master of Trinity College in Cambridge, Nobel laureate in physiology, noted in neurophysiology. He said:

> I should say that the standard of treatment of animals used for experiments is much the same in the United States as here. For that reason I do not think that State licensing of the kind contemplated—

by the bills in question about which I had written him—

> can make much difference to the welfare of animals in the United States.

We believe, Mr. Chairman, that although we very much wish to have help in improving the facilities, the training of personnel, research in animal diseases, and methods of care of animals, and although we have actually promoted at the local and State level inspection and licensing of our institutions, we believe that it would be a very great mistake to move in the direction of licensing individuals for specific experiments in biological and medical research.

Thank you very much.

Mr. ROBERTS. Thank you, Doctor.

I take it that you believe that the provision as to licensing would be better handled by the States than by the Federal Government.

Dr. VISSCHER. As I pointed out in the little document you have, I think it is more economical; in the State of Minnesota it is handled by the State livestock sanitary board which handled the control of care and management of all domestic animals in this State, in agricultural and industrial use. This organization has taken its responsibility seriously in inspecting and licensing laboratories in the State of Minnesota. I wouldn't say that this is necessarily the way it should be done everywhere, but it certainly is an economical and effective method in our State.

Mr. ROBERTS. Do you think that if the committee deleted certain portions of the bill having to do with licensing that you would not be opposed to some type of control on the part of the Federal Government in cases where the Federal Government is supplying the money for construction of laboratories, research facilities, or perhaps making institutional grants?

Dr. VISSCHER. I think, Mr. Chairman, that I would have no objection to the licensing of laboratories from the point of view of the adequacy of their facilities for carrying on work. I think I would have very strong objections to setting up a bureaucracy to control the very complicated matter of what sort of experiments are or are not appropriate. I cannot refrain from pointing out that it is impossible even for a scientist to judge what type of experiments may be necessary to be carried on until he looks into all of the scientific aspects of the questions that have to be investigated. It is unfortunately true that if one is to study the mechanism and the control of a disease process in man, one must be able to reproduce that disease process in animals. This is unfortunate. It frequently produces discomfort. But if we are to solve problems of human diseases we must be willing to do this. Granted, in fact I would insist, that it must be done under the most humane conditions, with the greatest attention to the welfare of the animals. But it is my position, and I believe, sir, that it is the position of a majority of the American people, that if it is

necessary to sacrifice animal lives even at the expense of some pain in order to save human life, which might be otherwise lost with such pain or more, that it is our moral position that it is justified under those circumstances to sacrific animal life. Any other position, sir, is an antivivisectionist position. And I hope that we will not get into the position of having to argue that it is justifiable to carry on types of experimentation which may be painful but which are absolutely necessary in order to save human life and save humans from pain.

Mr. ROBERTS. Thank you, Doctor.

I notice that as an appendix to your statement you have attached a copy of the Minnesota act which was passed in the 1949 legislature. And I am advised that the distinguished Member from Minnesota, Mr. Nelsen, was a member of that legislature, and I assume he voted for that act.

Mr. NELSON. Mr. Chairman, I would like to comment about the Minnesota act a bit. This is an act that provided for the licensing of educational and scientific institutions under the livestock sanitary board. They set up accommodations for experimental animals, and in the event that someone violated the requirements of the livestock sanitary board, the license could be removed.

That is approximately what is in the act, is it not, Doctor?

Dr. VISSCHER. Yes.

Mr. NELSON. And it has worked out very well in our State.

Dr. VISSCHER. It has worked out very well.

Mr. ROBERTS. Thank you.

Mr. Rogers, do you have any questions?

Mr. ROGERS of Florida. Mr. Chairman, I just want to ask this: Do you feel this type of legislation might be adopted on the Federal level?

Dr. VISSCHER. I think that if it is necessary to have Federal legislation in order to control the facilities and quality of personnel for the care of animals, that it would not be objected to by scientists. I am not sure it is necessary. I am sure that in the State of Minnesota it is unnecessary.

Mr. ROGERS of Florida. Thank you.

Mr. ROBERTS. Thank you, Doctor.

Our next witness is Dr. L. Meyer Jones, American Veterinary Medical Association, Washington, D.C.

Dr. Jones, you may proceed with your statement, sir.

STATEMENT OF DR. L. MEYER JONES, DIRECTOR OF SCIENTIFIC ACTIVITIES, AMERICAN VETERINARY MEDICAL ASSOCIATION

Dr. JONES. Mr. Chairman and members of the committee, I am L. Meyer Jones, director of scientific activities, American Veterinary Medical Association.

I appear today as the representative of the American Veterinary Medical Association (AVMA) and we appreciate this opportunity to express our views.

All veterinarians are opposed to neglect and cruelty of animals whether in a community at large or in a scientific laboratory. All of the professional training and activity of the veterinarian is directed toward maintenance of good health in experimental animals by proper

nutrition and management, provision of suitable physical facilities, and the prevention of disease.

The AVMA is opposed to the enactment of H.R. 1937 (Griffiths bill) and H.R. 3556 (Moulder bill). We do not accept the a priori premise of these bills; that is, that animals in scientific laboratories in the United States routinely are ill housed and mistreated and, therefore, that corrective legislation is necessary.

The proponents of H.R. 1937 and H.R. 3556 make a serious error in presuming that pain and treatment of animals in general can be interpreted in terms of man's response to the same conditions. This view is not correct. Animals possess a different level of intellect and different sensorial patterns from that of man. The problems of interpreting the animal's intellect and biological needs are best left to veterinarians and other biological scientists who specialize in the care of experimental animals.

The AVMA is opposed to the enactment of H.R. 1937 and H.R. 3556, because these bills would require Federal licensing of most biological scientists in the United States and inspection of their laboratories. In addition, prior approval of scientific research plans and procedures would be necessary by a Federal bureaucracy administered by nonscientific personnel.

The proposed bills would empower nonscientific personnel to reverse a scientific decision on the nature of an experiment and the scientific procedure and, also, could force termination of an experimental procedure at any time.

These redtape requirements would smother the personal originality, initiative, and liberty which has enabled American scientists to lead the world in medical knowledge. The AVMA is irrevocably opposed to Federal licensing and policing of scientific investigators and laboratories.

The AVMA supports the present progressive policies of Federal Government agencies granting funds for research involving animals. These agencies require scientific institutions to provide moral and humane care for experimental animals used in federally financed research. Great progress has been made in the last decade under this system of requiring the institution and the scientific investigation to accept the moral responsibility of caring for experimental animals properly. It is a fundamental fact that humane care and use of experimental animals cannot be obtained magically by simple legislative act. Humaneness to animals is a philosophy of mind. Humaness cannot be legislated.

The proposed legislation would dangerously limit, and in some instances curtail, the activities of biologists, veterinary scientists, and medical scientists in their use of experimental animals for research.

The issue in question is whether we can accomplish humane care and use of experimental animals by education and cooperation, rather than by legislation and policing. We believe more has been, and can be accomplished in the future by education and freedom for morally responsible scientific investigation.

This is the end of my formal statement, Mr. Chairman. And if you would permit me an additional personal comment——

Mr. ROBERTS. Without objection.

Dr. JONES. I would like to suggest to the committee that the original congressional measure establishing governmental granting agencies such as the National Institutes of Health specified that their responsibility was to study matters pertaining to the health of man without mention of responsibilities for the care of experimental animals used to that end.

I believe that it was not envisioned that experimental animals would need to be used so extensively to test drugs, biologics, and techniques before use in man.

I would like to suggest that some agency, perhaps this committee, should consider formulating a resolution authorizing the existing governmental agencies such as the National Institutes of Health to provide financial support from present funds and to advise on the care of experimental animals used in the health sciences.

These governmental agencies contain some of our best scientists who are in better position than most people to guide our scientific community and to promote humane care of experimental animals.

If these Government granting agencies are officially granted responsibility in this area there would be no need for creating new regulative agencies as in the proposed legislation. The Government agencies and health sciences could support training programs for animal care personnel and suitable physical facilities for animals used in the health sciences.

I would like to endorse the view of Professor Visscher that there should be a distinction between the use and care of animals. We of the American Veterinary Medical Association feel that the legislative issue before this committee is the care of experimental animals. Any legislative move to dictate the use of experimental animals perversely curtails freedom essential to scientific success.

Mr. ROBERTS. Thank you very much, Dr. Jones.

Questions?

Mr. ROGERS of Florida. Doctor, as I understand it, you feel that there is no legislation that would be helpful in this field?

Dr. JONES. I would prefer to say that I think that this is an area which requires personal conviction as to the necessity for humaneness in the care of animals. It is a matter requiring education and knowledge for improved care of animals.

I repeat my previous phrase to the effect that humaneness cannot be legislated. I think it is a problem for education and research to improve our knowledge in care of animals. I would prefer to see the existing Government agencies obtain moral commitments from the institutions and the investigators receiving the Federal research grants and that these well trained, moral individuals with their ethical views be permitted to conduct their experiments free from bureaucratic "red tape" that would restrict scientific freedom and achievement.

Mr. ROGERS of Florida. You think the National Institutes of Health could exercise great influence in this field?

Dr. JONES. I am very strongly convinced of this. I think this is one of our best examples of a Government agency with qualified men to advise on training and research programs for improved care of animals.

Mr. ROGERS of Florida. Are there any present programs in NIH that you are aware of where they have insisted on certain standards

being maintained and research that has been done with funds obtained from NIH?

Dr. JONES. I can answer this in a general way only—yes. I would prefer to refer that question to someone else who is closer acquainted with it, although I can supply information to the committee at a later date, if you would like.

Mr. ROGERS of Florida. Thank you very much.

Mr. ROBERTS. Thank you very much.

The next witness is Mrs. Marie W. Woodard of the Woodard Research Corp.

STATEMENT OF MARIE W. WOODARD, SECRETARY-TREASURER, NATIONAL CAPITAL AREA BRANCH, ANIMAL CARE PANEL

Mrs. WOODARD. Honorable Chairman and members of the committee, my name is Marie W. Woodard. I am secretary-treasurer of the National Capital Area Branch of the Animal Care Panel. I have a master of science degree from Georgetown University in physiological chemistry. I was formerly employed by the U.S. Food and Drug Administration, where I conducted experiments to demonstrate the safety of cosmetic and cosmetic ingredients by the use of laboratory animals. For the past 5 years I have been director of large animal toxicology for the Woodard Research Corp. I am also the mother of five children with normal arms and legs.

We believe that restrictive legislation such as proposed in the bills H.R. 1937 and H.R. 3556 would inhibit research to establish the safety of chemicals and drugs and would hamper education in animal care procedures.

The resolution which I am about to read was adopted unanimously by the National Capital Area Branch, Animal Care Panel in March 1962:

A RESOLUTION ADOPTED BY THE NATIONAL CAPITAL AREA BRANCH, ANIMAL CARE PANEL

Whereas the National Capital Area Branch, Animal Care Panel was organized for the promotion of the exchange of ideas and information regarding the care for animals used in biomedical laboratories;

Whereas the membership of this organization represents a cross-section of personnel in government, private, and industrial laboratories, as well as individuals interested in animal welfare;

Whereas the membership is agreed that research on living animals is essential to the development of useful, comforting, and often lifesaving drugs for domestic animals and pets as well as man; for the development of chemicals which will control insects and insect-borne diseases affecting plants and animals without harm to the protected animals or man; for the evaluation of the safety of chemicals that make possible modern food processing, storage, and distribution; and for the development of lifesaving procedures in the medical treatment of man and animals; and

Whereas it is generally recognized that any such experiment is no better than the health and well-being of the subject under study;

Resolved, That this panel continue its efforts as well as encourage similar organizations throughout the country to study factors which are important for proper animal care;

Resolved, That promotion of education and training of individuals for animal care be continued;

Resolved, That restrictive legislation such as H.R. 1937 and H.R. 3556 is unnecessary and would serve to inhibit research in education in animal care procedures; and

Resolved, That support be given to legislation which would provide for an advisory and educational service and which would provide funds to aid in research, education, and training in the field of animal care.

Mr. ROGERS of Florida. I wonder if you could advise the committee who makes up the National Capital Branch of the Animal Care Panel.

Mrs. WOODARD. Researchers and all people interested in the humane welfare of animals in the Washington, D.C. area. Dr. William Gay of NIH is the president. I am secretary-treasurer.

Mr. ROGERS of Florida. And how many members do you have in your organization?

Mrs. WOODARD. We have 113 members.

Mr. ROGERS of Florida. I see.

Thank you very much.

Mr. ROBERTS. Our next witness will be Dr. B. J. Cohen.

STATEMENT OF BENNETT J. COHEN, D.V.M., PH. D., ASSOCIATE PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF MICHIGAN

Mr. COHEN. Thank you, Mr. Chairman.

I regret very much that I learned of this hearing only yesterday, and so have not had an opportunity formally to prepare my remarks.

With your permission, however, I will submit my statement within 10 days, if that is all right with you.

Mr. ROBERTS. Without objection.

Mr. COHEN. I am Bennett J. Cohen, associate professor of physiology at the University of Michigan. I am past president of the Animal Care Panel, presently chairman of the Animal Facilities Standards Committee.

I am currently chairman of the Institute of Laboratory Animal Resources of the National Academy of Sciences and the National Research Council. This is the parent group which sponsored the report which you now have from Dr. Thorp.

However, I am speaking today primarily as the representative of the Animal Care Panel. In your questioning Mrs. Woodard, you asked, What is the Animal Care Panel? The National Capital area branch is one of approximately 15 branches located in metropolitan areas throughout the country. The Animal Care Panel was established in 1949. It is a voluntary association of institutions and individuals professionally concerned with the care, study, and use of laboratory animals in biomedical research institutions. In the years since the organization of the Animal Care Panel greater advances in laboratory animal care have occurred than in the previous 50 to 100 years.

I believe a certain lack of perspective has been evident in the discussion this morning; and perspective is what is most needed in this field at the present time. There can be no disagreement, and there is no disagreement among scientists that humane care as such is a very desirable end in itself.

I think it has already been stated that this is certainly so on scientific grounds. It is also so on ethical grounds. I don't think that the proponents of the bill are any more or less moral than biological scientists, and, of course, the reverse is true. I believe this has been made clear today.

It has been pointed out that problems exist in the field of laboratory animal care. Members of the Animal Care Panel would be the last to deny that problems exist. That is the very purpose, the very fabric of our organization. That is the reason that we were organized—to provide a forum for the exchange of information, and this is the only basis on which we can properly make advances in this field.

What are some of the specific activities of the Animal Care Panel to advance laboratory animal care?

The panel has published a scientific journal since 1950. I should like, with the permission of the chairman, to place several volumes of this scientific publication in the record of this particular hearing.

Mr. ROBERTS. Our record is going to be very voluminous. I think the chairman would have to limit that to the files of the committee.

Mr. COHEN. That is all I really meant, just simply to present to you the fact of the existence of a scientific journal whose sole purpose and function is to provide rational scientific information about the proper care of laboratory animals.

In the past few years, along with the spread of our local branches, has come a most significant development; namely, that of animal technician, training, and certification programs. At the present time there are a large number, and I think it is in excess of 100, animal technicians who have been certified as to their competence to do proper animal care according to the standards of what we call the Animal Technical Certification Board of the Animal Care Panel.

This indicates that these people who are not professionally trained but who are the people who do the day-to-day care of animals in research institutions, that these people have achieved standards of adequacy and competence in the performance of their work. We hope and expect through the local branches and through other sources of dissemination of information to spread this program nationally to the point where almost all if not all animal technicians are part of this program.

Another most important program which was alluded to by one of the proponents of these bills—which I incidentally am speaking against—is the animal facilities standards activity of the Animal Care Panel.

I should like to read to you from a document that is now in preparation. It is called "Guide for Laboratory Animal Facilities and Care." This is currently in its third draft, and is about half completed. I would like to read from the introduction:

> This guide is intended to assist scientific institutions in providing the best possible care for laboratory animals. The recommendations are based on scientific evidence, and on expert opinion and experience with methods and practices which have proved consistent with high quality care. This project is the work of the Animal Facilities Standards Committee of the Animal Care Panel aided by contract No. PH–43–62–122 from the National Institutes of Health.
>
> Laboratory animal medicine has experienced dramatic growth in recent years. This growth is a natural consequence of the increased financial support of medical research, of the consequent increase in the numbers of animals used, and of the great refinement in research techniques which requires better quality animals and animal care. Proper use of the guide should aid institutions in protecting their great investment in laboratory animals and facilities and in improving these facilities.
>
> The guide is symbolic of the scientific community's ethical commitment to provide the best possible care for animals used in the service of man and

animals. The recommendations are based on three principles. First, the care and management of laboratory animals should be directed by professionally qualified persons. Second, all animal care personnel should be suitably qualified by training and experience in the care of laboratory animals. Third, physical facilities and the methods of care for animals should permit their maintenance in a state of well being and comfort.

The committee recognizes that the nature of the animal facilities and the methods used in implementing these principles may vary with the type and size of the scientific institution. However, it hopes the guide will serve as a common reference for all institutions in conducting their animal care programs. This first edition of the guide is drected primarily to the problems of maintaining the most commonly used mammalian specialties in medical research institutions. It may contain errors of omission and commission. Corrections will be received gratefully. And the committee solicits constructive criticism. If the guide is to serve usefully it must be a living document subject to change with changing conditions and new information.

And I think that this last sentence is a key to how we ought to be interpreting the word "humane" today. It is not a static thing that has been defined for all time to come, the standards that were considered humane in 1850 would hardly be considered humane today. And it may well be that as time goes by, as we advance in some rational way our knowledge and understanding of the word "humane," that our standards too will be advanced.

I think this is eminently to be hoped for.

It is an interesting thing that the very same kind of problems which I have mentioned exist in British research institutions, operating under the law of 1876, which has received so much attention at this hearing. In fact, these very problems led our British colleagues to organize the Laboratory Animals Center and the Animal Technicians Association about the same time that our own Animal Care Panel was being formed.

Obviously this type of legislation is no guarantee against problems, and neither does it assure their solution. I submit that animal care in American research institutions now and today at this very moment is the equal of what you will find in British research institutions, in some cases better perhaps, and in some cases worse, but we are in fact on quite a comparable scale, and the existence or lack of existence of the British law of 1876 makes not one iota of difference in this particular regard.

I have addressed myself primarily to the problems of care of animals. This is the purpose and function of the Animal Care Panel. As a physiologist and as a teacher of physiology I should like to conclude by indicating some of the things that are being done in terms of improving the use of animals. I should like to give you as a specific example a course program that I teach in the department of physiology. It is called Physiology 801, Methods and Techniques in the Use and Care of Laboratory Animals. All of our graduate students in the department of physiology are required to take this course as part of their graduate training. Through program of this type, these students become indoctrinated and oriented to the proper conditions of care and use of animals.

In the area of professional training I think it was mentioned that we had a formal training program in laboratory animal medicine at the University of California. I recently left the University of California, and I hope and expect that the program which I had in Los Angeles will shortly be operating at the University of Michigan. This

is intended to provide advanced training for veterinarians who will be concerned professionally, as I am, with the care and maintenance of laboratory animals in research institutions. It is programs of this type that need expansion, programs which can be handled and managed through existing administrative mechanisms of the granting agencies, which will provide the kind of end which I believe the sincere proponents of H.R. 1937 and H.R. 3556 are seeking; namely, improvement in animal care. If this is in fact what the proponents seek, this is the route by which real improvement can be achieved.

I believe that this is about the substance of my comments at this particular time.

Thank you for the privilege of appearing.

Mr. ROBERTS. Mr. Rogers.

Mr. ROGERS of Florida. What is the membership of your organization, the Animal Care Panel?

Mr. COHEN. The Animal Care Panel has a membership in excess of 1,000 members. It has more than 150 institutions as members representing scientific institutions throughout the United States.

Mr. ROGERS of Florida. Most of these are the professional people involved?

Mr. COHEN. Yes, we number among our membership, however, quite a few people who are active in the humane movement.

Mr. ROGERS of Florida. Now, you mentioned an NIH contract.

Mr. COHEN. Yes, sir.

Mr. ROGERS of Florida. What is the extent of that?

Mr. COHEN. This was a contract made between the National Institutes of Health and the Animal Care Panel to determine appropriate professional standards for the care and maintenance of laboratory animals in research institutions.

This is a going program.

Mr. ROGERS of Florida. When was that first initiated?

Mr. COHEN. This contract was initiated on January 1, 1962. Its present termination date is December 31, 1962. We hope that we may extend this without additional funds for a short time to enable us to complete this document. And I might perhaps, if you wish, add just a little bit about what is going into it, what are the kind of things that we are concerned with.

Mr. ROGERS of Florida. If you would submit that with the statement I think it would be helpful. There is no use going into it now because there are so many witnesses.

What is the extent of the amount involved?

Mr. COHEN. It is about $13,000.

Mr. ROGERS of Florida. Let me ask you one final question. If your Panel was aware of some research institute that is not conducted in the proper manner and care of the animals, are you empowered to take any action, or do you feel that you have any authority to suggest to them, or have you done this?

Mr. COHEN. I think that the greatest sanction that can be provided against any scientist is the disapproval of his peers. The greatest of all. I am not personally acquainted with inhumane experiments as such. I have seen in institutions conditions which I should like to improve. And this is our approach, the one I have cited here, to the improvement of such conditions; namely, we want to increase

the attention to research and training, we want to increase attention to the physical facilities.

We want to increase attention to the education of graduate students in the biological sciences.

Mr. ROGERS of Florida. You don't have a policing unit—I see you have 150 organizations—do you have any self-policing units?

Mr. COHEN. The Animal Care Panel has a unit called the Animal Facilities Certification Board. At such time as these standards are completed and accepted by the board of directors, the animal facilities certification program will go into effect.

This will be a voluntary program analogous to that of the joint commission on accreditation of hospitals which sets standards for American hospitals.

Mr. ROGERS of Florida. Then any fund raising group, unless such a research organization were certified, would want it to be certified before any funds were placed with that organization, is that the idea of approach?

Mr. COHEN. I would point out that NIH has in its document explaining the form for applying for research grants a statement on the importance and the requirements for proper care of animals. I should also point out that the site visiting groups that visit institutions in connection with training and research grants do look into the adequacies of animal care facilities.

I should think that our own accreditation program will in time become a very meaningful part of this interest of NIH.

Mr. ROGERS of Florida. Thank you very much.

Mr. ROBERTS. Thank you very much.

I would like to state that at the last count we have 27 more witnesses.

We are going to give each witness five minutes and give them permission to file formal statements.

We do not feel that that is extremely harsh, because in the House we are under the same restraint at all times.

STATEMENT OF N. R. BREWER, SUPERINTENDENT OF ANIMAL QUARTERS AND ASSOCIATE PROFESSOR IN PHYSIOLOGY, UNIVERSITY OF CHICAGO

Mr. BREWER. Fair enough, I will keep my testimony under 5 minutes.

I am N. R. Brewer. I am a veterinarian, and superintendent in charge of the animal quarters at the University of Chicago.

I am also a physiologist and associate professor in the department of physiology.

I am immediate past president and member of the executive board of the American College of Laboratory Animal Medicine. And I am here representing that body today.

The American College of Laboratory Animal Medicine is living evidence that the scientific community is indeed aware of its responsibilities to the animals that it uses for its benefits. The American College of Laboratory Animal Medicine is a specialty board of the American Veterinary Medical Association. And as such we are interested in the dissemination of information, the encouragement of re-

search, and the conducting of symposia on diseases of laboratory animals.

We conduct about two such symposia a year, one at the American Veterinary Medical Association Annual Meeting, and the other at the Annual Meeting of the Animal Care Panel.

The American College of Laboratory Animal Medicine is convinced as a unit without any dissenting voice among the membership in the United States that the type of legislation proposed to regiment research workers is not a good type of legislation, it is not necessary.

Thank you.

Mr. ROBERTS. Thank you very much, Doctor.

(The following letter was later received from Dr. Brewer:)

THE UNIVERSITY OF CHICAGO,
CENTRAL ANIMAL QUARTERS,
Chicago, Ill., October 6, 1962.

Re hearings on H.R. 1937 (Griffiths) and H.R. 3556 (Moulder), Friday, September 28, 1962.

Hon. KENNETH A. ROBERTS,
Chairman, House Subcommittee on Health and Safety, Committee on Interstate and Foreign Commerce, House Office Building, Washington, D.C.

DEAR SIR: Permission is hereby requested to have the following testimony submitted. I could not present it authoritatively at the time of the hearings because I was requested to keep my testimony within 5 minutes.

As part of the hearings, Mr. Hume of the Universities Federation for Animal Welfare (UFAW) of Great Britain offered testimony that there appeared in the Encyclopaedia Britannica an article on animal experimentation, that said article was written by a member of the board of the National Society for Medical Research, that the article was false, and that Mr. Lane-Petter, now secretary of the Research Defence Society, had written to the editors of the Encylopaedia Britannica in protest.

As author of the article in question I want to set the record straight by quoting from my authority for the statement given that was cited as an example of the falsity of article in the encyclopedia at the hearings.

Quotation: "For and Against Experiments on Animals," by Stephen Paget, F.R.C.S., honorary secretary, Research Defence Society, H. K. Lewis, 136 Gower Street, WC., London, 1912. Page 14:

"Though it is true that some experiments under certificate A involve pain, yet it seems hardly reasonable that inoculations should be represented to the public as 'vivsection.' For example, in 1908, no less than 12,500 observations were made for the Royal Commission on the Disposal of Sewage. Young fishes and fishes' eggs were exposed to the influence of effluents in different stages of purification and dilution. That is all that was done to them. Under the act, every one of these 12,500 observations had to be returned to the Home Office as an experiment performed on a living animal without anesthetics."

I have no quarrel with our British friends that the bill is now far more liberally interpreted. But, according to Dr. Paget, 12,500 observations had to be returned to the Home Office, and that fact cannot be labeled as "falsehood."

Thank you.

Very truly yours,

N. R. BREWER, D.V.M., Ph. D.

Mr. ROBERTS. Mr. Fred L. Myers, executive director of the Humane Society of the United States.

Mr. Myers.

STATEMENT OF FRED MYERS, EXECUTIVE DIRECTOR, THE HUMANE SOCIETY OF THE UNITED STATES

Mr. MYERS. Mr. Chairman, I have a prepared statement that I will refrain from reading, of course, at the chairman's request, hoping that it may be, however, entered in this record.

Mr. ROBERTS. Without objection.

(The prepared statement of Mr. Myers follows:)

STATEMENT OF FRED MYERS, EXECUTIVE DIRECTOR, THE HUMANE SOCIETY OF THE UNITED STATES, IN SUPPORT OF H.R. 3556

I appear on behalf of the Humane Society of the United States, a national organization, whose purpose is the prevention of cruelty and propagation of a humane ethic, and for the society's branches and affiliated local humane societies. The membership for which I speak is distributed through every State of the Union. Our membership has specifically endorsed the substance of what I shall say, acting in two annual national conventions and through referendum balloting on the underlying fundamental policies.

The Humane Society of the United States unqualifiedly endorses H.R. 3556, a bill introduced by Representative Morgan Moulder, and strongly urges its enactment into law.

We support Congressman Moulder's bill for these reasons:

(1) An immense amount of physical pain now is being inflicted every year on animals used in research, teaching, and the production of pharmaceutical materials;

(2) Much of this pain can be avoided without impeding medical research or any other necessary or useful activity;

(3) The infliction of pain that is avoidable constitutes cruelty and is inconsonant with the moral standards of the American people and with long-established legal policies of the Government of the United States—millions of Americans join in asking the Congress to take action because of the moral issues involved;

(4) Mr. Moulder's bill would save millions of dollars of public funds now wasted annually;

(5) The proposed law would in many instances improve the quality of medical research and operate to protect the public against dangerously invalid conclusions about drugs, disease, and experimental medical and surgical procedures;

(6) The highly desirable potential results of H.R. 3556 cannot be obtained without the sanction of Federal law.

If the statements that I have just made are true, then unquestionably the Congress will want to enact H.R. 3556. I shall undertake, therefore, to offer proof that these statements are true.

Before proceeding, however, I think that I might help this committee by defining the purposes of H.R. 3556, as we understand them, and the motives of our members who find those purposes laudable.

First of all, I believe that I should stress the fact that the Humane Society of the United States is not an "antivivisection" society, as that term has come commonly to be understood. We oppose and we seek to prevent all cruelty but we are realistically aware that the use of animals in research will continue far into the future. As the chief executive of a national antivivisection society once remarked to me, "animals will be used until the doctors themselves find a way they like better." So the Humane Society of the United States is not attempting to abolish use of animals in research. We restrict ourselves to what we can hope to accomplish—in this case the elimination of suffering that can be prevented without impeding honest and careful research.

H.R. 3556 is a bill that exactly conforms to those purposes.

Now I have said, as a first argument in support of H.R. 3556, that an immense amount of physical pain now is being inflicted every year on animals used in research and allied pursuits. You, as a committee of the Congress, are entitled to proof of that statement.

We estimate that more than 300 million vertebrate animals are now being used annually in research, teaching, and pharmaceutical production processes in the United States. The number is so vast that it must be hard even for Congressmen, accustomed though they are to huge figures, to comprehend. Perhaps the enormity of the number will be more easily realized if I translate it into an equivalent: 10 animals per second, 24 hours a day, 7 days a week, the whole year around. In every second while we meet here, 10 vertebrate animals are being used (which means they are being killed), in America's laboratories.

It was soberly predicted about a year ago, by an animal-using scientist speaking to a meeting of scientists and laboratory technicians, that by 1970 the mone-

tary value of laboratory animals used annually in the United States will equal the value of all of the agricultural livestock produced each year by American farmers and ranchers.

The physical magnitude of the activity with which H.R. 3556 is concerned almost staggers the imagination. You gentlemen of the House of Representatives have this year voted to allow the National Institutes of Health to spend and give away some $840 million of public funds for medical research. Most of this activity will involve use of animals. Other agencies of Government—Defense, Agriculture, Commerce—also have been granted large funds for activities in which animals are used, the aggregate of authorizations running well past $1 billion in a single year.

With the funds that you have authorized, the NIH will finance approximately 12,000 individual research projects.

And a committee of consultants, named by the Senate and headed by Boisfeuillet Jones, vice president and administrator of health services at Emory University, has estimated that by 1970 the medical research units will be asking you for a minimum of $2 billion a year.

It will be necessary for me to say more, somewhat later, about the effect and significance of this prodigously accelerating expenditure of money. At this time my purpose is only to convey to you the nature and size of the problem that is being considered. Some 300 million animals are being used in medical research in 1962; if present trends continue, the number in 1970 will approach 1 billion.

Any use of such a vast number of animals, constituting a great interstate commerce and paid for largely by public funds, is inevitably, sooner or later, going to demand control by law.

Many of this vast number of animals are subjected to conditions and procedures that cause pain and physical suffering.

Pain and suffering, of course, are of many degrees. Many animals used in research suffer little more than the prick of a hypodermic needle or the discomfort of confinement. But many other animals—many millions of animals every year—are subjected in our laboratories to pain of the greatest intensity that clever and knowledgeable men can devise. Indeed, in many recorded experiments the avowed central purpose has been to inflict extreme pain so that the effects of pain itself might be observed.

The housing and care of animals in many large laboratories—I believe I would be correct if I said most laboratories—is disgraceful.

I have myself, in the last 5 years, visited more than 40 of the largest and best known animal-using laboratories of the United States. I have seen and studied their animal cages, their records, their procedures, their personnel. I have been the immediate supervisor of staff investigators of the HSUS who have spent an aggregate of several years working inside medical school laboratories as animal caretakers and laboratory technicians.

In the course of this work and study of the subject I have seen tens of thousands of animals so inhumanely housed and cared for that the condition itself constituted cruelty. At Johns Hopkins University I have seen closely caged dogs suffering from advanced cases of bleeding mange, without treatment. At Georgetown University I have seen a German Shepherd dog confined in a basement cage so small that the animal could not stand erect. At Marquette University I have seen 40 or 50 dogs locked up in rows and tiers of small cages, with no runway or exercise space available at any time for any of the animals. At Tulane University we found cats confined in cages suspended from the ceiling, with the wire mesh of the cage floors so widely spaced that the cats could not walk, stand, or lie down in normal manner. At New York University I walked for several hours, on a weekend, through several floors of caged dogs, cats, monkeys, rats, rabbits, sheep, and other animals, scores of them wearing the bandages of major surgery and many of them obviously desperately ill, without ever encountering any doctor, veterinarian, caretaker, or even a building janitor. The Overholzer Thoracic Clinic, in Massachusetts, has kept animals convalescing from surgery in such pigsty conditions that a Massachusetts court, on complaint of the Massachusetts SPCA, returned a verdict of illegal cruelty.

At Loma Linda University, in California, unlicensed kennel men have performed "debarking" surgery on dogs. In the Children's Hospital in Cincinnati one of our investigators found small rhesus monkeys chained by their necks inside steel cages so small that the animals could barely move. Kennel men at Leland Stanford University habitually, while we had an investigator working

there, turned both hot and cold hose water on sick animals while washing cages, rather than undertake the labor of cleaning by hand.

The U.S. Government itself is far from humane in this respect. Most Congressmen probably are familiar with the fact that the Health, Education, and Welfare Department still is cruelly confining several hundred dogs in tiny iron cages in a Washington subbasement. Some of those dogs have been so locked up for years and many of them, I can tell you from personal observation, are deformed and literally "stir crazy" as a result of this cruelty.

I have myself seen mere technicians—men with no academic degrees and with no pretense at professional qualifications—performing the work of a surgeon in a laboratory of the National Institutes of Health. I have seen a live and fully conscious dog, with an open incision into the thoracic and abdominal cavity, lying on the concrete floor of a corridor in that same laboratory, writhing desperately but unable to rise, while a dozen or more men and women passed without as much as a sideways glance.

From personal observation and from the sworn reports of investigators who have worked under my supervision I could give you many other examples of what may be called "cruelty by neglect." I indict Harvard University, Northwestern University, Chicago University, Creighton University, the University of Pittsburgh, the National Institutes of Health, Western Reserve University—every one of which I know to have been guilty of neglect or mistreatment of animals. I can and will supply details to any extent that this committee desires.

I want to make it emphatically clear that the institutions named are not exceptional. On the contrary, they afford typical examples of the type of housing and routine care, treatment and neglect of animals that is common and ordinary in American laboratories.

You may be told, and you may feel inclined to think, that such reports as these must be exaggerated because, it would seem to a reasonable man, scientists would take good care of laboratory animals for economic reasons if no other. But these reports are not exaggerated, as other dependable witnesses will certainly tell you, and it must be understood and realized that by no means is everyone working in animal-using laboratories a scientist.

Indeed, another measure of the magnitude of the activity that we are discussing is in the fact that more than 200,000 persons, at least, now are employed in the laboratories that use animals. It is as though we were discussing the entire city of Jacksonville, Fla., or Flint, Mich., or Charlotte, N.C., or Providence, R.I.

In any such group of our population there are men and women who are kind and compassionate, honest and conscientious. The majority, no doubt. But in any such group there also are men and women who are cruel, emotionally unstable, ignorant, lazy, dishonest. That is why we have criminal laws. Such laws cast no reflection on the moral majority; they are necessary because there is always an immoral minority. So it is in this case.

The suffering inflicted on animals in our laboratories is, of course, not merely that which is caused by bad housing or neglect. Indeed, although suffering from such causes is indefensible and by any definition of law or morality constitutes cruelty, great numbers of animals undergo procedures that are immensely more painful than any neglect.

It is unpleasant, but I must speak of some of these things in some detail. H.R. 3556 proposes control over and limits to the experimental procedures that cause pain and a description of what it is proposed to control and limit is unavoidable.

On the table, here, I have an instrument known in medical research circles as the Blalock press. It somewhat resembles, as you see, an old-fashioned printing press in which one plate can be forced against an opposing face by a screw arrangement. In the Blalock press both plates have rows of dull steel teeth. Transversely, there is a slot about 2 inches wide.

This press, used in scores of experiments extending over many years, is used to crush the leg of a dog. A hind leg of a dog is inserted in the transverse slot, which is provided so that flesh may be crushed to a pulp without breaking the bones of the leg. The press can be calibrated so that measurable pressures ranging from 500 to 5,000 pounds per square inch can be exerted.

Let me describe, precisely, the use of this press by a University of Rochester group, as reported in volume 24, No. 2 of the Journal of Clinical Investigation, dated March 1945. This group crushed more than 400 dogs in a Blalock press in a study of the effects and causes of shock.

In all cases, the Rochester experimenters anesthetized the dog before pressure of 2,000 pounds per square inch was applied to the dog's leg. Each dog remained in the press for several hours and "in no case" was any anesthetic given during the last hour in the press. Nor was any anesthesia or sedative given later, while the dog lived.

The dogs usually died, in extreme pain, in from 5 to 12 hours after being released from the press but some dogs survived the ordeal for 24 hours. Dogs—fully conscious—were tied down on a table for 12 hours after being taken out of the press. And I must repeat, none was given any drug to relieve pain.

In a study of medical periodicals a research team of the HSUS has found reports of 143 other projects in which dogs were subjected to the Blalock press or to virtually identical equipment and procedures, the total number of animals used in these specific experiments being more than 4,000. Our search of the literature was by no means exhaustive.

There are many ingenious ways to send a dog into the kind of shock that is a result of injury and pain. Research workers of Columbia University, reporting in the American Journal of Physiology, volume 148, dated January 1947, used a rawhide mallet instead of the Blalock press. The technique was simple. The dog was lightly anesthetized with ether—not enough, the investigators reported, to eliminate "the element of 'feel'," then its hind legs were beaten with a rawhide mallet. About 1,000 blows were administered.

Ether was discontinued as soon as the beating stopped.

Of 30 dogs used, 25 eventually died of their injuries but they lived from 1 to 9 hours before they died.

This other piece of equipment on the table is known as a Noble-Collip drum. It, too, has been very widely used to produce shock in animals. The procedure is described in detail in an article entitled "A Quantitative Method for the Production of Experimental Traumatic Shock Without Hemorrhage in Unanesthetized Animals," published in the Quarterly Journal of Experimental Physiology, 31:187–199, 1941–42.

The experimenter—if indeed this procedure can still be called experimental after many repetitions—customarily tapes together the forefeet and the hindfeet of a rat or guinea pig and places the helpless, unesthetized animal in this drum. A door is then closed over the front of the drum and the drum is then revolved by a small electric motor at a rate of about 200 revolutions per minute. The imprisoned animal is carried nearly to the top of the wheel by centrifugal force and then is dropped by gravity to the bottom. The steel projections within the wheel insure that the animal will be efficiently injured.

Animals subjected to this procedure ultimately become unconscious in the wheel but most of them regain consciousness for a time after removal. Like the products of the Blalock press and the rawhide hammer, they live several conscious hours before they die in pain.

I wish to reemphasize, here, that I am not at this time raising any question about the necessity for or utility of the experiments or procedures that I am describing. I am most rigorously excluding opinion from the discusion; I am intent only on giving you facts about what happens to animals in research laboratories. With the facts before you, the decision as to whether such things should be subject to control by law will be yours to make.

You should know about experiments that involve burning of animals. I have heard it repeatedly said, by seemingly sincere scientists, that animals do not suffer in laboratories. I wonder most often whether such witnesses have read the scientific literature of research into burns.

For example, a Harvard University research team has studied the effects of severe burns of pigs. The pig was selected for this study because of the histological resemblance of porcine skin to that of human beings.

The Harvard pigs were tied on a steel grate about 2 feet over pans full of gasoline in a concrete, fireproof room. The gasoline was ignited by an electric spark.

In another experiment, dogs were forced to take 120 inhalations of air heated to 500° C. The dog was anesthetized while breathing the searing air but not later. One such dog lived 4 hours.

Other dogs were forced to inhale actual flame. Animals of that group were killed 3 to 5 days after the inhalation.

All of the last three experiments that I have described were reported in a symposium on burns, sponsored by a committee of the National Research Council, on November 2–4, 1950.

Experimenters at Walter Reed Army Institute of Research have reported a classic example of an experiment deliberately designed to cause pain. The experiment is reported in Neurology for April 1962.

In this experiment monkeys were used. Under anesthesia, wire electrodes were implanted surgically in pain perception areas of the brains of nine monkeys. Several days after the surgery the experimenters began applying electric currents to the brains of the monkeys, which were fully conscious and restrained in steel chairs. The pain was sufficiently intense so that, as the report in Neurology says, the monkeys showed "facial grimacing, closure of both eyes, high-pitched vocalization, and generalized motor activity." In other words, the monkeys screamed and struggled vainly to escape the pain.

The monkeys, however, had a possibility of escape. They could, if they were smart enough, diminish the electric current by pressing a switch. Most monkeys learned to press the switch after about 6 hours of pain. But then the experimenters strained the monkeys beyond endurance by continuing their tests uninterruptedly for 24 hours, allowing the monkeys no food, water, or rest during all that time.

I cannot resist a wish to tell you about a bizarre experiment conducted at the Army Chemical Center, in Maryland. This is described, in the American Journal of Physiology, May 1950, as a study of "effects of extreme cold on the fasting pigeon, with a note on the survival of fasting ducks at minus 40° C." And the description is accurate. The pigeons were confined in a jar, in which the temperature was reduced to minus 40° C. (which is also minus 40° F.). They had no food or water. Most of the pigeons died in about 60 hours but some surprised the experimenters by living 6 days.

Ducks did even better (or perhaps worse, if the viewpoint is that of the ducks). Of four ducks tested, the first to succumb died after 7 days and one duck was still alive after 16 days.

At the other extreme, again, experimenters supported by the Office of Naval Research scalded 43 female dogs by dipping them, while anesthetized, into water heated to 85° C. (185° F.). The dogs received no anesthesia or sedative after they regained consciousness. Most of these dogs died within 24 hours but only after suffering intense agony. Details are reported in the Surgical Forum, 10:346–351, 1959.

The experimenters do not, by any means, always use anesthesia when inflicting severe burns or other injuries on animals. The American Journal of Physiology reported, in October 1957, an experiment in which "in order to obtain plasma from burned rats, unanesthetized animals were strapped by the legs to a wooden board and dipped into boiling water up to the rib cage for 5 seconds." The animals were killed 15 minutes later—but what a 15 minutes!

We could continue with a description of painful experiments virtually ad infinitum and certainly ad nauseam. The NIH alone receives more than 11,000 reports of this kind every year. The hundreds of scientific periodicals of the Nation annually print additional thousands of such reports. A continuation is unnecessary, however, if the point is understood that the examples that I have offered are exactly that—exemplary.

Animals do suffer intense pain in laboratories, in immense numbers.

I have said to you, as our second argument for H.R. 3556, that much of this pain is avoidable—and without in any way impeding medical research.

Commonsense alone tells us all that this is true. In such a vast activity, in which more than 200,000 persons are engaged in using more than 300 million animals every year, inevitably there is callousness, carelessness, waste, inefficiency, ignorance, and even psychopathic cruelty. Those who may argue that nothing evil or even inefficient ever occurs in laboratories do not, and cannot, really mean what they say.

Fortunately, however, we need not rest solely on commonsense.

Consider, for a moment, the section of H.R. 3556 requiring that laboratories receiving Federal funds shall use as few animals as is consistent wtih the objectives of any experiment. I doubt that anyone will dispute that this is a reasonable proposal. But would this provision of the Moulder bill actually diminish the amount of pain that laboratory animals now suffer? Definitely it would.

The Humane Society of the United States earlier this year provided a grant of funds, made available by the Doris Duke Foundation, to an eminent group of statisticians who undertook a scientific analysis of published reports of animal-using experiments to determine whether the number of animals used could have been reduced without in any way impairing the value of the experiments. All

of this group of statisticians, headed by Dr. Edward C. Bryant, former head of the Department of Statistics of the University of Wyoming, are highly trained and experienced in the statistical design of biological experiments.

I am not authorized to attribute direct quotations to Dr. Bryant's group at this time, because they have not completed their work, but Dr. Bryant told me in a very recent conference that he and his colleagues have determined that in more than 70 percent of approximately 200 statistically typical experiments analyzed, a statistically excessive number of animals was used. The indications are that the excess runs to an average of around 20 percent.

I am not a statistician and I shall not attempt to offer any exact interpretation of Dr. Bryant's findings but it is obvious that many millions of animals now are being used unnecessarily.

Other eminent scientists have agreed with the indicated results of the Bryant study. For example, Dr. John T. Litchfield, Jr., director of experimental therapeutics research for Lederle Laboratories, said in a recent address to the Pharmaceutical Manufacturers Association that there is a fallacy in the demands frequently heard for testing of drugs on more and more animals.

"* * * How many animals are enough? Dr. Litchfield asked.

He answered that, of course, there must be a statistical design that takes into account the purpose and background information of the experiment, but "this is not enough." The number of animals that can be usefully used is limited, Dr. Litchfield said, by the necessity for observing each experimental animal carefully and of conducting microscopic morphological observations postmortem. "One can observe a small number of animals carefully," Dr. Litchfield observed, "but it is obviously not practically possible to observe 100 or more to the same extent."

This is a clear, indisputable proof that H.R. 3556 would reduce pain without in any way impeding medical research. Incidentally, here also is clear proof that the bill would save money for taxpayers and even improve the quality of medical resarch. I shall say more along that line a bit later.

H.R. 3556 would further reduce the aggregate of pain and suffering among laboratory animals through its simple and reasonable requirement (sec. 12–e) that "animals used in surgery or other procedures causing pain or stress shall be given pain-relieving care and convalescence conditions substantially equal to those customarily or usually given to human patients before, during, and after similar procedures."

Judging from performances elsewhere, I suspect that opponents of this legislation will today argue variously: (1) that these policies already are standard practice in all laboratories and (2) that the idea is ridiculous and, anyway, would be too costly. I have often heard both arguments advanced from the same platform, sometimes even by the same speaker.

But the National Society for Medical Research, the American Physiological Society, the American Medical Association and other impeccable scientific organizations seem to agree that this section of Mr. Moulder's bill is reasonable as well as humane. The American Physiological Society has published from time to time a set of "Guiding Principles in the Care and Use of Animals" in laboratories.

"The postoperative care of experimental animals shall be such," the APS says, "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."

The American Medical Association, the National Academy of Sciences-National Research Council, the Federation of American Societies for Experimental Biology and the National Society for Medical Research have agreed in a published statement that:

"The postoperation care of animals must be such as to minimize discomfort during convalescence in accordance with acceptable hospital practice."

Mighty few laboratories in America, if any, abide by those standards but we have the considered judgment of the authoritative organizations quoted that section 12–e of H.R. 3556 is reasonable, practical, and morally mandatory. H.R. 3556 would achieve a reduction of the total pain suffered by laboratory animals by converting into enforcible law what is now only a pious and dishonored preachment.

Indeed, every clause of Mr. Moulder's bill would operate to reduce suffering, as well as to reduce waste of money and of research facilities, but I will offer only one more example. Let us consider section 12–i: "All premises where

animals are kept shall provide a comfortable resting place, adequate space and facilities for exercise normal to the species, sanitary and comfortable cleanliness, and lighting, temperature, humidity, and ventilation appropriate to the species."

Who will argue that this should not be required? Who will argue that this requirement would impede medical research? No one, I think, will so argue.

It quite likely will again be argued, instead, that: (1) All laboratories already meet the proposed standards, and (2) to meet these standards would be forbiddingly costly.

As rebuttal to any thought that laboratory animals already are comfortably and humanely housed, I present to you a photograph of the quarters in which the world-famous Overholzer Thoracic Clinic, of Boston, housed dogs convalescing from surgery—until the Massachusetts SPCA prosecuted for cruelty. I also offer to you a photograph of monkeys in a research foundation laboratory of the Children's Hospital of Cincinnati, taken by an HSUS staff investigator. Note the size of the cage, the wire mesh bottom of the cage, the heavy chains around the necks of the monkeys. Where is the "comfortable resting place" and where are the "facilities for exercise normal to the species"? And I also show you a photograph, also taken by an HSUS investigator, of a typical cat cage in Tulane University. Note that the cat can neither stand, walk, nor lie down in any normal manner because of the fantastic wire spacing of the cage suspended from the ceiling.

Our own investigators have made hundreds of similar photographs in laboratories throughout the United States. We have pictures showing filth, pictures showing dogs that have been confined for as long as 7 years in a single cage, without exercise of any kind.

Yes, the Moulder bill would reduce suffering. And through the operation of this particular section the bill would also improve the quality of medical research.

Before leaving this point: That much of the suffering now inflicted on laboratory animals is avoidable, I return again to the dictates of ordinary commonsense. Regardless of what technical debate there may be about this clause or that clause, regardless of arguments about statistics or housing or anesthesia or motives—I think that every reasonable man will agree that in the handling of 300 million animals a year by more than 200,000 persons it must certainly be possible to reduce pain and suffering without harm to medical research. And when that point is granted we come face to face with a great moral issue.

The infliction of pain that is avoidable is cruelty. Cruelty is generally conceded to be immoral and it has historically so been regarded by the laws of the United States and by all of its subdivisions. Every major religion of the world speaks unequivocally on this subject.

To permit and encourage the infliction of avoidable pain is as immoral as it is personally to inflict it. As John Ruskin said: "He who is not actively kind, is cruel."

Neither I nor the humane societies of the United States stand alone in saying these things to the Congress. The public conscience is stirred. Let me prove this.

Within the last 2 months a special committee of the Humane Society of the United States has been seeking expressions of opinion from some of America's most eminent and respected citizens on the general subject matter of this hearing.

Please listen to this statement:

"Use of animals in research is a practice of such variety and complexity that one can neither condemn it nor approve it unless some careful distinctions be first laid down. Within certain limitations I regard the practice to be so justified by utility as to be legitimate, expedient, and right. Beyond those boundaries it is cruel and wrong. The essential problem is to define those boundaries.

"I regard as unjustifiable the common practice of subjecting animals to suffering in the laboratory or classroom, merely for the purpose of demonstrating well known facts. I hold that the infliction of torment upon a living animal under such circumstances is not justified by necessity, and I believe it psychologically harmful to young students.

"I believe, therefore, that the common interests of humanity and science demand that use of animals in research and teaching should be brought under the control of law. The practice, whether in public or private, should be surrounded by every possible safeguard against license or abuse."

Please note the climactic statement that "I believe that use of animals in research and teaching should be brought under control of law."

That statement, gentlemen, has been personally signed by the following men and women:

Charles Greeley Abbot, retired Secretary of the Smithsonian Institution.
Rev. Bradford S. Abernethy, B.D., professor, Rutgers University.
Earl B. Abrams, editor of Broadcasting magazine.
Hollis Alpert, writer.
Rev. Stuart Anderson, B.D., professor of homiletics, Pacific School of Religion.
Warren Andrew, M.D., Ph. D., professor of anatomy, Indiana University
Robert C. Angell, Ph. D., professor, Department of Sociology, University of Michigan.
Charles J. Armstrong, Ph. D., LL. D., president, University of Nevada.
Rt. Rev. J. Gillespie Armstrong, S.T.B., S.T.D., D.D.; bishop, diocese of Pennsylvania, Protestant Episcopal Church, U.S.A.
William B. Arthur, editor, Look magazine.
Norman P. Auburn, D.. Sc. S.S.D., Litt. D., president, University of Akron.
Rev. Henry H. Bagger, B.D., D.D., LL. D., president, Lutheran Theological Seminary.
Philip Milo Bail, Ph. D., president, Municipal University, Omaha, Nebr.
Herman M. Baker, M.D., physician, former president, Indiana State Board of Health.
Milton Leon Barron, Ph. D., chairman, Department of Sociology, College of the City of New York.
Alice Thompson Beaton, magazine editor and writer.
Frank Bennett, Ed. D., president, Eastern Oregon College.
Henry A. Boorse, Ph. D., professor of physics, Barnard College, Columbia University.
William Bridges, Litt. D., editor and curator of publications, New York Zoological Park.
Frederick W. Brown, Ph. D., director, Boulder Laboratories, National Bureau of Standards.
Herbert Brown, Ph. D., Litt. D., L.H.D., professor, Bowdoin College; managing editor, New England Quarterly.
Rev. Emory Stevens Bucke, S.T.B., editor, Abingdon Press, Nashville and New York.
George F. Budd, Ed. D., president, St. Cloud (Minn.) State Teachers College.
Kenneth Burke, author.
Ralph A. Burns, Ed. M., LL. D., professor and chairman of department of education, Dartmouth College.
Rev. Millar Burrows, Ph. D., D.D., professor emeritus, Yale University Graduate School
George D. W. Burt, editorial page editor, Louisville Times
Rev. Frank H. Caldwell, Ph. D., president, Louisville Presbyterian Seminary
Jane C. Carey, Ph. D., teacher and writer (political science)
Natalie Savage Carlson, author of children's books
Rt. Rev. James W. F. Carman, B.D., D.D., bishop of Oregon diocese, Protestant Episcopal Church
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Rachel L. Carson, A.M., D. Sc. (Hon.), biologist, author
William H. Cartwright, Ph. D., chairman of Department of Education, Duke University
Simon Casady, editor, El Cajon (Calif.) Valley News
Shau Wing Chan, Ph. D., professor of Chinese, Stanford University
Robert F. Chandler, Jr., Ph. D., agronomist, associate director of the Rockefeller Foundation
Rev. Nelson T. Chappel, B.D., general secretary, World Council of Christian Education
Ralph Cherry, Ed. D., dean, School of Education, University of Virginia
Harold Christensen, Ph. D., professor of sociology, Purdue University
Bishop Matthew W. Clair, Jr., D.D., LI.D., Bishop of the Methodist Church, St. Louis, Mo.

Thomas D. Clark, Ph. D., professor of American history, University of Kentucky
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The Rev. Canon Charles M. Guilbert, S.T.D., secretary, National Council of the Protestant Episcopal Church
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Frank H. Rowsome, writer; editor, Popular Science.
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Judson A. Rudd, M.A., educator; president emeritus, Bryan College.
Jacob Philip Rudin, D.D., rabbi, Temple Beth-El, Great Neck, N.Y.
Harry Ruja, Ph. D., professor of philosophy, San Diego State College.
Rev. Hoover Rupert, S.T.B., D.D., pastor, First Methodist Church, Ann Arbor, Mich.
Frederic A. Russell, Ph. D., LL.D., professor emeritus, University of Illinois.
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Nahum M. Sarna, Ph. D., assistant professor of Bible, Teachers Institute.
Ruth Sawyer, B.S., writer.
Henry H. Saylor, architectural editor.
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Rev. Paul J. Schwab, Ph. D., LL.D., clergyman; chairman of Department of Religion and Philosophy, Trinity University.
Mrs. Elizabeth Hough Sechrist, writer of children's books.
Walter T. Secor, Ph. D., professor of modern languages, Denison University.
Joseph Seidlin, Ph. D., university teacher and administrator.
Samuel Selden, Litt. D., professor, University of California.
William A. Settle, Jr., Ph. D., professor of history, University of Tulsa.
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Upton Sinclair, B.A., author.
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Ruth E. Smalley, M.S.S., D.S.W., dean and professor, School of Social Work, University of Pennsylvania.
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Bradford Smith, M.A., writer, educator, Benington College.
Rev. Erdmann Smith, LL.D., minister, First Baptist Church of Denver.
Msgr. Gregory Smith, M.A., clergyman, Roman Catholic Church; pastor of St. Francis de Sales Church, Denver, Colo.
Howard Van Smith, writer, Miami Daily News.
Ralph J. Smith, Ph. D., professor of electrical engineering, Stanford University.
Rev. Richard B. Smith, B.D., clergyman, Baptist Church; executive secretary, Union Theological Seminary.
William V. Smith, Ph. D., physicist.
Craig Hugh Smyth, Ph. D., professor, Institute of Fine Arts, New York City.
W. D. Snively, Jr., M.D., physician; executive vice president of Mead & Johnson Co.
David E. Snodgrass, LL.B., dean, University of California, Hastings College of Law, San Francisco.
Rev. R. Grady Snuggs, S.T.D., clergyman; head of Department of Religion, University of Tulsa.
Harry A. Sorensen, Ph. D., professor, Department of Mechanical Engineering, Washington State University.
Rev. Harry C. Spencer, B.D., DD., ordained to ministry, Methodist Church; general secretary, Television, Radio and Film Commission.
Edwin H. Spengler, Ph. D., professor, Brooklyn College.
Rev. W. Brooke Stabler, L.H.D., Episcopal clergyman; headmaster, Tower Hill School, Wilmington, Del.
Kenneth M. Stampp, Ph. D., professor of history, University of California.
W. G. Steglich, Ph. D., professor of sociology, Texas Tech College.
J. B. Stephens, A.B., executive editor, Scripps-Howard News.
William A. Stocklin, B.S., editor, Electronics World.
William C. Strand, writer; editorial staff, Chicago Sun-Times.
J. C. Street, Ph. D., chairman, Department of Physics, Harvard University.

Frank W. Suggitt, D.P.A., consultant, economic development and planning, Michigan State University.
Rev. Samuel H. Sutherland, D.D., LL.D., president, Biola College, La Mirada, Calif.
Bishop Joseph A. Synan, Sr., D.D., general superintendent, Pentecostal Holiness Church.
Rev. Charles L. Taylor, Th. D., D.D., clergyman, Episcopal Church; director, American Association Theological Schools.
Ross M. Taylor, Ph. D., department head, University of Wichita.
Weldon J. Taylor, Ph. D., dean, College of Business, Brigham Young University.
John Tebbel, Litt. D., writer; professor and chairman of Department of Journalism, New York University.
Ralph I. Thayer, Ph. D., professor of economics, University of Washington.
Albert W. Thompson, Ph. D., dean, College of Science and Arts, Washington State University.
Carol L. Thompson, M.A., editor, Current History.
Ralph B. Thompson, Ph. D., professor of marketing, University of Florida, Gainesville.
John S. Walters, editor, Times Union and Jacksonville Journal, Jacksonville, Fla.
A. E. Zucker, Ph. D., professor emeritus, University of Maryland.

It is gratifying and I think it highly significant, that many of these eminent Americans who recommend control by law of the use of laboratory animals are also eminent scientists. They express a conviction based on considerations of morality and they know well the facts behind the issue.

Many of these men and women have added spontaneous additional remarks that are germane to the issue that you are considering. For example, Dr. Loren C. Eiseley, the very famous anthropologist of the University of Pennsylvania, has written to us:

"I furthermore believe that animals kept in captivity for experimental purposes should be protected by some kind of adequate housing standards for reasons of health and comfort. Many are ill fed and otherwise abused."

Dr. A. R. T. Denues, president of Cancirco, Inc., a cancer research institution located in Rye, N.Y., has written:

"I am sure that your efforts will help medical research and its proper conduct. My thanks."

In the list of names above you will find evidence of the best and the most influential of American thought on this subject. All who are quoted are agreed that the Congress should act to protect laboratory animals by law.

I have said to you that enactment of H.R. 3556 would save substantial amounts of money now wasted. This is an important reason for enactment of the bill and I offer a brief discussion in support of the bald statement.

Again, as the best possible resort, I appeal to commonsense. It is obvious that wherever and whenever a billion dollars of money is being spent, there inevitably is waste. That is particularly unavoidable when the enterprise is one of research. I don't really agree with the dictum of a former Secretary of Defense that "pure research is what you do when you don't know what you're doing," but I think that we all felt that in his epigram there was a kernel of truth. It is not a truth that is discreditable to scientists but it is, nevertheless, truth. And when "you don't know what you're doing" with a big part of a billion dollars, there is bound to be waste.

In the part of our national research and teaching activity that uses animals, there indubitably is waste.

The Journal of the American Medical Association said, earlier this year, that "far too few people have realized that the stepped-up efficiency with which these sums (for medical research) are raised does not necessarily mean that they are equally efficiently spent."

The Presiden of the Markle Foundation, which for many years has specialized in financing discriminating medical research, has said that the current vast flow of funds into medical research has attracted status seekers and men of doubtful ability into the field and has resulted in much shoddy research because the pretense of work is done for shoddy reasons.

President Kennedy himself, when a Senator, called for coordination of medical research in new ways so as to avoid wasteful duplication.

Dr. Alan Gregg, vice president of the Rockefeller Foundation, has said that "the medical literature of today exemplifies all too fully the biological adage that life is choked by its own secretions."

And Dr. David E. Price, Deputy Director of the NIH, says: "It is said that it is easier to repeat research than to dig it out of the literature. * * * If these charges are true, then we seem to be strangling ourselves to death, or to be traveling in circles."

I have already indicated the enormous significance of the statistical analysis of typical medical research experiments being done by Dr. Bryant and his associates but it should be emphasized particularly that their findings indicate a clear waste of public funds and equally clearly show an open route to important savings. Statistical analysis of this kind is among the methods of control that would be used by the Agency for Laboratory Animal Control proposed by Congressman Moulder.

The Moulder bill would exert a needed new control over redundancy and repetition, with their unavoidable incidental waste of money. Taxpayers as well as humanitarians will thank you for making law of this bill.

You will most certainly hear arguments here today, to the effect that legislation is unnecessary because the 8,000 or 9,000 animal-using laboratories in the United States will police themselves.

A persuasive rebuttal to that contention is that they have not so far done so.

It will become obvious today, I expect, that neither do they intend to do so.

There are scientists, there are laboratory administrators, who know that reforms are needed and who wish to have those reforms effected. But there is no central organization of those who use animals in research, there is no organization with authority. In this respect, this field is an anarchy. And there can be no effective self-policing in an anarchy. It would be as reasonable to say that the American people as a whole need no anticruelty laws as to say that none is needed in this special but very large segment of the American population.

I will conclude with a comment on a technical aspect of H.R. 3556—the methods provided for operation and enforcement of the proposed controls. We believe that in these respects Congressman Moulder's bill is an exceptionally admirable example of good legislation. We think it markedly superior in this respect to the other bill that you are today considering.

H.R. 3556 would establish an Agency for Laboratory Animal Control under the administration of a Commissioner for Laboratory Animal Control. The Agency and the Commissioner would be responsible simply for law enforcement and would have no authority to interfere with research, to direct it, or to influence it. The Commissioner would have a nonpolitical status.

No new army of inspectors or investigators would be required. The enforcement technique would consist principally of expert analysis of requests for funds submitted by applicant laboratories and of reports submitted by these same laboratories at specified times.

The proposed law would get its teeth—and they are big teeth—from provisions of the bill that would make laboratory officers and individual researchers subject to the penalties of perjury and of fraud if false statements were submitted. Wt think that very few responsible officers of research institutions would knowingly commit perjury or commit fraud in obtaining Federal funds. If there should be any such, then the penalties of the Moulder bill would be justified.

In any event, whatever the enforcement and administration of this law might cost, there would most certainly be a great net gain to the taxpayer. Auditing procedures do not cost money, they save money.

We are here discussing an activity that involves a vast interstate commerce in animals (predicted soon to be equal in value to all of the livestock product of our farms and ranches), that involves the expenditure of more than a billion dollars a year of public money, that involves more than 200,000 persons scattered through some 8,000 or 9,000 laboratories, that involves the progress of our medical research and the safety of our public, and that involves a compelling issue of morality.

Sooner or later the Congress will see the need and necessity for imposing controls over this activity. We hope that the time will be soon.

Mr. MYERS. I would like to take a few minutes for a few extemporaneous remarks not based on my prepared statement. Most of all I wish to convey to this committee a realization of the magnitude and the urgent nature of the problems that we are here discussing.

We are very grateful to this committee and particularly to you, Mr. Chairman, for giving time at a moment when I know all of you

are pressed for time, and when you are weary with many problems at the end of a Congress.

But if I may say so, with the utmost respect, the fact that this hearing is only now being held, and that a relatively very few hours were allocated to the purpose, indicates that the Congress is not yet aware of the significance of these bills.

The House has appropriately referred this legislation to its Committee on Interstate and Foreign Commerce, but I wonder whether the members of the committee realize what a magnitude of interstate commerce is here involved. We are talking about a problem that involves the use of 300 million animals a year.

Very recently, quite recently, a sober and responsible spokesman, addressing a meeting of scientists concerned with this problem, predicted to them that by the year 1970 the value of the animals to be used annually in research and allied pursuits would equal the monetary value of all of the livestock produced by all of America's farms and ranches, and this is not a fantastic statement.

A Commission appointed by the Senate some months ago, headed by Boisfeuillet Jones of Emory University, predicted to the Senate that by the year 1970 the laboratory interests will be asking the Congres for more than $2 million a year for this purpose.

We are, in other words, talking about something which is a major part of interstate commerce of the United States. And I believe, in response to a question addressed by the chairman to a previous speaker, that it is entirely possible that the interstate comerce magnitude of this subject would provide a basis for law applying to the entire subject, without relevance to the limitation imposed by grants.

Mr. ROBERTS. Mr. Myers, let me break in at that point. How does this get to be an interstate commerce problem? I agree with you, but I would like for you to explain it.

Mr. MYERS. Well, virtually all of the animals now being used, the 300 million per year, are in interstate commerce, just as are hogs, sheep, cattle, and other livestock. And the Congress has found it very easy under the interstate commerce clause of the Constitution in many ways to regulate the livestock industry.

I believe, therefore, that there would be no constitutional impediment to a different approach to this problem. We have proposed——

Mr. ROGERS of Florida. May I ask a question?

Mr. MYERS. Yes, sir.

Mr. ROGERS of Florida. Do you mean that these 300 million are shipped from one State to another?

Mr. MYERS. Yes, sir. And there are other interstate commerce aspects of the problem, such as the flow of funds, the flow of people involved—if you go back to all of the precedents that involve the labor laws, for example, you will find that in this situation there are so many aspects of interstate commerce that it clearly is accessible to regulation under that constitutional clause.

Mr. ROBERTS. Now, right along that same line, what about the interstate handling of cattle and swine, lamb, and other meat products?

Mr. MYERS. Well, the Congress did, for example, in—I think it was 1908—and it has subsequently by amendment, enacted a law governing the conditions under which livestock are to be shipped; that is, by the railroads in interstate commerce.

This was a humane law with a humane purpose, and the Congress found in that case and the courts have subsequently held with the Congress——

Mr. ROBERTS. I assume that would apply to any interstate carrier, would it not?

Mr. MYERS. No, that one was enacted specifically only for railroads, and has not been amended. But I think it is clear——

Mr. ROBERTS. Carriage by plane?

Mr. MYERS. Yes. That, too, is regulated, not for a humane purpose, but the interstate carriage of animals by plane is the subject of Federal statute.

Mr. ROBERTS. Thank you.

Mr. MYERS. One other aspect of the major nature of this I think could be emphasized. I believe, as Congressman Moulder brought to your attention, that easily more than 200,000 persons are engaged in this work as a full-time activity. This is as though we were talking about the entire population of the city of Flint, Mich., or Charlotte, N.C., or similar cities.

And I think the magnitude has implications about many other aspects of the discussion that we have had. For example, no one would contend to you that because most of the people of Flint, Mich., are humane, therefore the city of Flint, Mich., needs no anticruelty law. The fact that there are good people and churches and active organizations in Flint, Mich., working for humane treatment of animals, would not be accepted as an argument why there should be no law.

The thing that seems to me most important to establish in this hearing is that if there is one thing certain about this whole subject, it is that ultimately the Congress will find itself compelled to act.

I would like to stress another point. I will try to be very brief—and I am not going into my statement.

Mrs. Stevens made principally the point that there is a vast suffering among the animals that are involved.

My argument for this bill would run this way: that there is a vast suffering, that much of this is preventable without in any way impeding medical research, and that if that is true, then the law should be enacted.

Further, I would say that there are incidental benefits, such as that it would save enormous sums of the Federal taxpayers' money, and that it would improve the quality of medical research in many ways.

As to the first point, that there is need for this kind of legislation, allow me to describe the operation of this. (Mr. Myers pointed to two pieces of equipment on a table.) The details are described in my statement. This is an instrument of common use in most laboratories, and has been for many years, and it is still used to create a traumatic shock in experimental animals. In this particular instrument the forelegs of an animal—guinea pig, rabbit, or such small animal—are taped together, the hind legs are taped together, the conscious animal is put into this drum, which is called a Noble-Collip drum, a door or plate is placed over the front, and then the whole thing is revolved at approximately 80 to 100 revolutions a minute for anywhere from 100 to 2,000 revolutions, the effect being that the animal is lifted and dropped and lifted and dropped. This produces, of course, internal injuries and an extreme condition of assault on all of the tissues and

capillaries and nerve centers of the animal, so that it emerges in shock. It has been found, as is reported in my statement, that animals will live after this experience for anywhere from 1 hour to 7 or 8 days before they die. But during that period there is, of course, intense suffering, because they have been deliberately injured to the point that it ultimately becomes fatal.

Here is another device for a similar purpose called the Blalock press. Into this is placed one of the hind legs of a dog. The dog is anesthetized during the time that it is in the press. The press is operated by turning down the screws until you can reach a pressure—and commonly the experiments do—of 2,000 pounds per square inch. The dog is left in that press for approximately 4 to 5 hours, and is then removed. It is under anesthesia while in the press. But after removal a dog may live anywhere from 1 hour to 12 or 14 days, fully conscious, but dying of this kind of injury.

Ad infinitum and ad nauseam I could tell you about some of the things that cause pain. I shall not. But it should be understood by the committee that there is great pain inflicted on animals, and that therefore there should be controls. I shall not attempt, because of the limits on your time, to continue with even any kind of a summary. But I would like to call your attention to a few pictures, very few, that deal with conditions in laboratories.

These first two pictures show where the Overholdt Thoracic Clinic, a world-famous organization of Massachusetts, customarily kept dogs convalescing from major surgery until the Massachusetts Society for the Prevention of Cruelty to Animals discovered the condition and prosecuted the officers successfully in police court.

This is a photograph taken by one of the staff investigators of the Humane Society of the United States in the animal quarters of Tulane University in New Orleans. Dozens of cats were confined in cages like this and suspended from the ceiling for weeks on end. And you will see that they can neither lie down, stand, nor sit in any normal position.

This is a photograph—these are two photographs of cages, of which there are many identical types in the Children's Hospital Research Center in Cincinnati. You will note that the animals—these small monkeys—are in a steel cage which is hardly high enough for the animals to stand erect, and each animal has a steel chain with a steel collar around its neck. And we ascertained that those animals were kept in that condition for as long as 6 months at a time.

I assure you that these are typical examples. I would like to tell you, sir, that I have myself, personally, in the last 5 years visited more than 40 American laboratories and their animal quarters. I have also been the immediate supervisor of a group of investigators, staff investigators of our society, who have worked as kennel men and technicians in a variety of laboratories across this country.

I would like to present to the committee a book published by our society which is a documentary statement of the daily reports submitted to us by one of these investigators in one institution. And it is a record of neglect of animals which is most shameful.

In conclusion, because of the limits of time, I wish merely to call your attention to one statement. You were told by the two or three immediately preceding speakers that most of the scientists of the

United States oppose this kind of legislation. I do not know whether most scientists oppose this or not, because I do not believe that anyone yet has taken a poll of most of the scientists of the United States. But we attempted to ascertain on your own account what is the typical opinion of scientists and other leading figures among the most eminent citizens of the United States. I ask you to let me read a very short statement. This statement was signed by a great number of scientists.

> The use of animals in research is a practice of such variety and complexity that one can neither condemn it nor approve it unless some careful distinctions first be laid down. Within certain limitations I regard the practice to be so justified by utility as to be legitimate, expedient and right. Beyond those boundaries it is cruel and wrong.

And then I skip part of the statement, because it is in my prepared statement. And it concludes, then:

> I believe, therefore, that the common interests of humanity and science demand that the use of animals in research and teaching should be brought under the control of laws.

The signers of this statement include—and I am not going to attempt——

Mr. ROGERS of Florida. Is that in your statement, too?

Mr. MYERS. Yes. But I just want to point out to you that they include four university presidents—many of which have research institutions of the kind we are discussing. They include such men as Dr. Warren Drew, a professor of anatomy at Indiana University. They include the director of the Oak Ridge Institute of Nuclear Research. They include scientists of all types. And they are saying to the Congress in these signed statements that they believe you should enact this type of legislation.

I believe that that is all that I can offer under these circumstances.

Mr. ROBERTS. Thank you, Mr. Myers. And I want to say that the subcommittee appreciate the very fine work you have done in the field, and your interest in this legislation and other legislation.

Now, I would like to ask one question. The conditions you spoke of, as shown in the pictures that you exhibited to us—and you also talked about the prosecution of the people in the Overholdt Laboratories, and their conviction—now, would those situations in your opinion be covered under the bill before the subcommittee?

Mr. MYERS. Yes, sir, I believe they would be well covered. This bill, as someone else emphasized, is not a punitive police bill. It is a bill which sets standards for the distribution of Federal funds. But in the end result there is an iron hand in a velvet glove. Those who seek Federal funds under the terms of H.R. 3556 would have to sign application statements and make further reports that would be under the penalties of perjury. And that would be the ultimate, I think, penalty.

Mr. ROBERTS. Mr. Rogers?

Mr. ROGERS of Florida. I appreciate your statement, Mr. Myers. I think you pointed out the problem extremely well. As I understand it, it is your position that this bill is not needed for medical research, but you wanted to see them treated as humanely as possible.

Mr. MYERS. I certainly want to emphasize that neither of the bills here—but I speak particularly of 3556—is intended to or would in any way impede any kind of medical research that is legitimate and

proper. It would only give a set of standards from the Congress to the controlling agency and say, "these are the standards you are to follow in allocating Federal funds."

Mr. ROGERS of Florida. Thank you.

Mr. ROBERTS. Mrs. Madeline Bemelmans from New York. I believe Mrs. Bemelmans stated to the clerk that she was up against a plane schedule.

Mrs. STEVENS. She had to leave.

(The statement of Madeline Bemelmans, Society for Animal Protective Legislation, is as follows:)

STATEMENT OF MADELEINE BEMELMANS, PRESIDENT OF THE SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

My name is Madeleine Bemelmans and I represent the Society for Animal Protective Legislation. Personal visits to laboratories and research in medical journals and books at Columbia University have convinced me that experimental animals are in desperate need of legal protection. Before I had ever been to a laboratory, I asked a doctor about the treatment of animals used in research and he said, "Oh, they are treated with such consideration, it's just unbelievable." But when my misgivings persisted and I mentioned reports of abuses to a woman doctor she answered, "True, and true again, but nobody wants to stick their neck out by talking." So I steeled myself to see for myself and can bear witness to inexcusable conditions. I have seen emaciated, mutilated animals, dogs who were given no sedation after major surgery, dogs trembling and withdrawn or frantically barking, mice and rabbits agonized by mite infestation to the point that raw flesh and deep red holes in both ears were visible.

The pain and discomfort resulting from experimentation is often compounded by bad housing and lack of exercise. Anyone, who has known a dog, can appreciate the physical deterioration and mental suffering of dogs who are never released from their cages. Yet, again and again, we are told, "Dogs do well in cages. How can you tell they're not happy?" Frequently, cages are inadequate in size, so that rats have to pile up, one on top of the other, rabbits cannot stretch out in a natural position, and dogs cannot hold up their heads. Once I complained that a large hunting type dog was in a cage much too small for him and the attendant answered, "This blame dog just grew too fast." Cats suffer when they have nothing but wire mesh to lie upon and this same widely spaced wire makes standing difficult and painful. Monkeys, so curious and active by nature, are generally kept in bare cages with nothing to relieve the boredom of their long captivity. One particularly pathetic example was a young monkey, separated from its mother and brought up in isolation, with the result that, when approached, it cowered in fear and bared its teeth. It is not my purpose to pass judgment on individual experiments, but I think we already know that children brought up without love become antisocial and delinquent.

Ordinarily, the layman visiting a laboratory cannot learn too much about the experiments themselves; by way of illustration, therefore, I should like to read excerpts concerning two experiments described in the Physiological Review of April 1960 (pt. 2, supp. No. 4, vol. 40). The first is taken from a paper by Dr. O. A. Smith (Department of Physiology and Biophysics, Department of Anatomy, University of Washington School of Medicine, Seattle, Wash.) on animals in which hypothalamic lesions had been induced. He says, "As a matter of fact, we ran one dog and we wanted to run him to exhaustion. There were no heart rate changes to exercise in this dog. We turned on the treadmill and let him run until he fell down. This was after about 4½ or 5 minutes. The only trouble with his observation was that the animal had urinated, and we were afraid he slipped on the urine and that this was the reason for his falling down, not a failure of the cardiac output or an oxygen deficit."

The second experiment concerns cardiovascular reflexes: "Dykman and Gannt have reported one dog that developed a marked tachyardia to the experimental environment as a result of traumatic electrical stimulation. The animal accidentally received three shocks of high intensity (60-cycle a.c.) in one daily training session during the middle of orienting training * * *. On the day following the shocks, the dog appeared to be only mildly upset; but during the next 24 days he became progressively more disturbed, cowering at the sight

of the experimenter, refusing to eat in the experimental room, and showing struggling, vomitting, defecation, and penile erection when placed on the conditioning stand." (P. 252, Conditional Cardiovascular Reflexes in Dogs and Men, William G. Rees and Roscoe A. Dykman, Department of Psychiatry, University of Arkansas.)

Again, I withhold judgment, but I disagree with those who maintain that all is well in laboratories. My own experience is corroborated by others with a greater knowledge of biology than I. I have with me their statements in defense of H.R. 1937, which I should like to submit with my own. May I read a brief portion of testimony by Sally Carrighar, distinguished naturalist and author:

In my biological training, I have had association with many research workers and medical students, and the best evidence comes from within the scientific professions themselves.

Some of the methods used in laboratories have changed in the last few years. For example, dogs are now deprived of their voices by surgery before any experiments are begun. In a biology building where I formerly worked at night, the dogs used in experiments were housed on the other side of the wall. The scientists had gone home—but if they had been there the whimpering and yelping of the dogs would have told them that drugs to relieve the pain should have been administered. Remembering those agonized canine voices, I recently asked a young physician how the newer medical students can judge the need for sedatives if a dog has been "devocalized," as the scientists phrase it.

His answer was startling. He said, "It is the prevalent attitude in medical schools now that dogs can't feel pain—dogs do not suffer." The prevalent attitude: meaning, in the simplest terms, that medical students are encouraged to believe that drugs to relieve the animals' pain are not required.

When I expressed my surprise that such an idea could have taken hold, the young physician who had given me the information challenged me with the question, "How can you prove that animals suffer?"

It seems to me that if you can't prove animals suffer, then how can you prove anything else by them? And what kind of thinking would deny that pain is nature's mechanism for self-preservation? Fortunately, all doctors do not share the prevalent view. Dr. Gulielma F. Alsop, long associated with the Woman's Medical College of Philadelphia, has written:

Though animals are not human beings, it is the similarity of their reactions that makes the results of experiments done to them transferable in part to human beings under like stimulation. Animals are not inanimate testing machines. They are warm-blooded creatures filled with love, loyalty, and affection for their human masters, able to suffer, to be exhausted, to undergo terror and pain and stress, to die eventually of an inoculated human disease. In their kinship to us lies their experimental value to us.

Yet, in spite of this value to us, experimental animals, at the present time, have no protection and no recourse against cruelty, caprice, callousness, or ignorance. Dr. Stefan Ansbacher, Scientific and Medical Consultant, Jocinah Farms, Marion, Indiana, cites a specific incident which he feels H.R. 1937, had it been law, might have prevented:

In one institution, I experienced a scene that can hardly be described in a letter. Let me say that I saw the utmost cruelty inflicted upon an entire group of animals by a man "in charge" of them. He was so "mad" that the veterinarian who was present with me had to assist me in stopping the "game."

Sadly enough, such brutality is not necessarily confined to the uneducated. A highly respected scientist told me: "In any class of medical students, you can always spot a certain number with sadistic tendencies." And, as another doctor has commented, medicine provides an opportunity to express these tendencies in ways that are socially acceptable.

Certainly no conscientious scientist approves of sadism or any other form of cruelty or neglect. But, in many cases, the experimenter rarely goes near the animal quarters, and even the person in charge administers from his office. Not only do the animals suffer but the quality of research as well. When it is possible to find a marking on a cage, describing, not the current experiment, but a previous one; when the man in charge of animals is not sure of how or when a dog has lost an eye—someone is at fault. H.R. 1937 would place the responsibility where it belongs: on the man performing the experiment.

One of the objections raised by opponents of this bill is that the required recordkeeping would involve a lot of redtape. However, Prof. Dwight Ingle,

in "Principles of Research in Biology and Medicine," published by Lippincott in 1958, says on page 86:

Make an immediate, intelligible record of all that is done and observed; memory is fallible. * * * The recording of procedures need not be time consuming if the experimenter develops suitable data sheets and symbols of results. Page 87—At least once each year, the experimenter should write a concise report on his research. This is an aid to the establishment of perspective for the experimenter himself and for others interested in his research.

With a better exchange of data among scientists, duplication could be prevented, waste of money, and unnecessary suffering vastly cut down. Considering the large sums poured into medical research by the Federal Government, legislation relating thereto is of major importance. It is the responsibility of the taxpayer to insist that such funds be not spent in a way that violates decent, humane principles. For whatever reason we defend our use of animals—superior force or God-given right—justice demands that we mitigate as far as possible the suffering inherent in their service to mankind.

On behalf of the Society for Animal Protective Legislation and all those who have supported us in our work, I beg for your prompt and favorable action on H.R. 1937.

Mr. ROBERTS. Dr. Pfeiffer, I believe you're next.

STATEMENT OF CARL C. PFEIFFER, PAST PRESIDENT, AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, AND DIRECTOR OF THE BUREAU OF RESEARCH, NEW JERSEY NEUROPSYCHIATRIC INSTITUTE, REPRESENTING THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

Dr. PFEIFFER. Thank you, Mr. Roberts.

I am Dr. Pfeiffer, the past president of the American Society for Pharmacology and Experimental Therapeutics. We have 1,000 members in the United States. I am also on the executive committee of the federation, which is more popularly known as the Federated Societies of Experimental Biology. This has a membership of 8,000 in the United States.

My present job is director of the bureau of research of the State of New Jersey. And I am engaged in research on new drugs which may help the mentally ill. I am here to speak against House bills 1937 and 3556.

In the first place, I have for the first time seen what the previous speaker called a common bit of laboratory equipment, namely, the Noble-Collip drum and the Blalock press. These are devices which were used in only a few laboratories during the war. I was in the Naval Medical Research Laboratory during the war, and we did not use either of these devices. But in the case of the Blalock press, doctors found in Britain after the bombing of buildings that people would be crushed with no bones broken, and that they would die approximately 5 to 7 days later, and they would die as a result of protein coming from the muscle to occlude the kidneys. Therefore Blalock at that time devised this instrument, presumably, or a facsimile of it, in order to crush the muscle of an anesthetized dog without breaking any bones. These individuals in Britain had no bones broken, yet they died. And from that they found various methods of increasing the excretion of protein in the urine so that the protein of the muscle would not block the kidneys. In the case of the Noble-Collip drum, this may be used in the occasional laboratory, but it is

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certainly not a common bit of laboratory equipment. It is very rare that this is used in the study of shock.

I would like to point out that none of my colleagues who are interested in doing animal experimentation go to Britain to spend their sabbatical leaves. They do not go there because as foreigners as much as 3 to 4 months are required for them to supply the proper credentials to indicate that they can anesthetize animals and carry on experimentation. On the contrary, many people in England, Canada, Australia come to the United States to do experimentation. They do this because there is no need to wait for a license in the United States in order to carry on what their publications have already proclaimed them; namely, adequate experimenters from the standpoint of what they have done in the past and the degrees that they have earned in biological research.

I come here, stealing time from the U.S. Public Health Service, because I am a consultant to the U.S. Public Health Service. And this morning I sat on a panel at the National Institutes of Health in order to determine whether or not grants should be given for animal experimentation in various laboratories throughout the country. We have as a routine process on these study sessions the project site visits to determine whether or not the laboratories are suitable. We have the previous publications of the individuals to judge as to whether or not they should get this grant for animal experimentation.

I would like to point out that one provision of the bill 3556 says that the law would "apply to experimentation on any species capable of a conditioned response." We, as scientists, know that it is possible to condition earthworms, that therefore the experiment of putting two worms on a fishhook would come under bill 3556 if a grant were allowed for this experiment. In other words, the earthworms can be conditioned. We know that the fish can be conditioned. And we know that the fireflies can be conditioned. I mention fireflies because this does come under the grant provision of the U.S. Public Health Service.

We have in the firefly a very specific enzyme called luciferase. And this enzyme is needed to assay a biochemical in the body. So that some scientists who have U.S. Public Health research grants have teenagers collecting fireflies in order to make the luciferace. Since the proposed bill would cover the lowly firefly, we must then provide some method of anesthetization to the firefly before it is put in the bottle in order to make the luciferace.

This, then, shows the ridiculousness of some of the provisions of the House bill 3556.

The 8,000 scientists for which I speak in the United States would oppose these bills as being bureaucratic, restrictive, and needless legislation.

Thank you.

Mr. ROBERTS. Thank you very much.

You take a position against both bills in toto?

Mr. PFEIFFER. Yes.

Mr. ROBERTS. Thank you very much.

I will next call Dr. C. A. M. Hogben, professor of physiology, University of Iowa.

STATEMENT OF DR. C. A. M. HOGBEN, PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF IOWA

Dr. HOGBEN. Mr. Chairman, I just have a few extemporaneous remarks I would like to address to you in reference to these two bills before you.

I come here primarily to correct the impression created by some of the previous people who have testified in regard to the origin and impact of the British law.

I happen to be the son of a distinguished British biologist, and as a consequence of that I am very familiar with the thinking of British scientists.

In general, this law is considered burdensome and irksome by most. And I suspect that the considered opinion of the scientific community would be to now ask for a repeal of that law should the circumstances in Britain be comparable to those encountered in the United States.

The law is not repealed for the simple reason that there exists in Britain a very strong antivivisectionist sentiment, and it does represent a clear protection for the scientists.

I would submit to you that we should consider these bills in terms of their appropriateness to the American scene. We can recognize that though a comparable law has worked in Britain after a period of 80 years of evolution, it is not strictly relevant to our concern here today.

I hope that this may serve to clarify the record.

Mr. ROBERTS. Thank you, Doctor.

Would you care to comment relative to Mr. Meyer's statement about the fact that there are millions of dollars involved in interstate shipment of these animals—that might bring into play some responsibility on the part of the Federal Government?

Dr. HOGBEN. I would be inclined to suggest that these figures are somewhat inflated, in view of the fact that the majority of animals that I use in medical research are not shipped great distances.

I do not come prepared to testify to the extent of the amount involved.

Mr. ROBERTS. Well, certainly, in the case of the rhesus monkeys that almost gets to be an international matter.

Dr. HOGBEN. That is correct.

Mr. ROBERTS. And if I understand correctly, it is very expensive to procure them for that purpose.

Thank you very much.

Next we will hear from Miss Helen E. Jones, National Catholic Society for Animal Welfare, Washington, D.C.

Miss Jones, I am sorry that I have not been able to call you before now.

Miss JONES. That is all right, Mr. Chairman.

STATEMENT OF MISS HELEN E. JONES, EXECUTIVE DIRECTOR, THE NATIONAL CATHOLIC SOCIETY FOR ANIMAL WELFARE, WASHINGTON, D.C.

Miss JONES. With your permission, Mr. Chairman, I will submit for the record my prepared testimony and summarize it very briefly.

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The National Catholic Society for Animal Welfare urges enactment of legislation requiring the humane treatment of laboratory animals for these reasons.

First, laboratory animals are now without protection from cruelty and suffering. The anticruelty laws of the States are hopelessly inadequate to insure the humane treatment of hundreds of millions used experimentally each year in this country.

As the Congress found in the case of the slaughter of meat animals, where vast numbers of animals are involved, cruelty and suffering are widespread and the anticruelty laws of the States are inadequate to achieve reform. A Federal law is obviously and urgently needed.

Second, cruelty and suffering are indeed widespread in experimentation on animals today. The conditions that cry out for reform are not limited to those in the housing or feeding of the animals. The foremost need of laboratory animals is for humane treatment during and after experimentation. Pain relieving care often is lacking. The nature of the experiments themselves is frequently grossly cruel, causing pain, fear, and every conceivable form of suffering.

I might mention in passing, Mr. Chairman, that the National Catholic Society for Animal Welfare is not an antivivisentionist organization. We are opposed, as the vast majority of people are, to cruelty whereaver it occurs. We believe also that cruelty to animals in research, out of the philosophy that the end justifies any means whatsoever, or as the result of neglect or careless indifference to their suffering, degrades mankind and impedes serious research.

Animals are being subjected to pain, fear, and every possible form of suffering. They are being beaten, starved, burned, frozen, blinded, drowned, forced to swim and run until they die, accelerated deprived of sleep, irradiated, skinned, and subjected to other methods of inducing pain and fear in infinite variety. Nor is their suffering limited to that inflicted during the experiment. Often after undergoing excruciating painful procedures, they are given little or no post-experimental care to relieve their pain and terror.

In most laboratories, the animals are simply returned to a wire bottom cage to suffer, unattended.

Many of the researchers reports in medical journals specify that no pain relieving care was given.

It is not unusual to find animals housed in cramped cages, without even a solid place on which to sit or lie, for as long as 5 or even 10 years. They are deprived of exercise, sun light, companionship. They may in some cases be forced to lie in their own filth.

The conditions under which animals are being abused in research constitute the most intense and shameful of all the nationwide cruelties to animals.

Mr. Chairman, without further delay, I wish to state the views of the National Catholic Society for Animal Welfare on legislation now before this committee.

Following is a pertinent part of the resolution adopted by the society's board of directors in July 1960.

The increasing volume and intensity of animal suffering resulting from practices that exceed the limits of the licitness in experimentation, causing it frequently to degenerate into a mere torturing of animals, leads the National Catholic Society for Animal Welfare to believe that legislation governing the use of animals for experimental purposes is urgently needed. Laws to compel

medical researchers to abide by the same standards of conduct expected of private citizens toward animals are indicated.

The NCSAW considers the Moulder bill, H.R. 3556, to be reasonable, effective, and workable legislation in all respects but one. Our objection is to the phrase "unless the project plan approved by the Commissioners states that anesthesia would frustrate the purpose of the project."

This will be found on lines 1, 2, and 3 of page 8, section 12(b) of the bill.

The phrase vitiates an otherwise excellent bill, and would permit the continued infliction of intense and prolonged suffering on animals, without the relief of anesthesia.

We urge that the bill be amended to remove the phrase, and we are deeply pleased that Mr. Moulder so recommended in his remarks this morning.

We feel so strongly about the need for a clear requirement for anesthesia in experiments causing suffering that the NCSAW can support H.R. 3556 only if lines 1, 2, and 3 on page 8 are struck out.

In all other respects, we consider the bill to be the answer to the need for legislation establishing humane standards for the care, housing, and use of animals in research.

I will then cut out the rest of my statement to save time, except to say that I believe the cost of administering the Moulder bill, if it is enacted, would be one-two thousand four hundred and forty-eighths of the NIH appropriation for research grants in fiscal 1963.

We of the NCSAW are confident that the taxpayers of this country would agree with us that the merciful treatment of animals is worth that tiny expenditure of money.

Thank you very much, Mr. Chairman.

(The complete statement of Miss Jones follows:)

STATEMENT OF HELEN E. JONES, EXECUTIVE DIRECTOR OF THE NATIONAL CATHOLIC SOCIETY FOR ANIMAL WELFARE, WASHINGTON, D.C.

Mr. Chairman and members of the committee, my name is Helen E. Jones. I am executive director of the National Catholic Society for Animal Welfare which has headquarters in Washington. The NCSAW is an organization concerned with advancing knowledge of the Catholic Church's teachings on animals and on man's obligations in the relationship between man and animals. The society is concerned also with the application of those teachings in daily life for the alleviation of animal suffering and the advancement of respect for God's animal world. In that connection it works for the prevent of nationwide cruelties.

The NCSAW's membership is composed not only of Catholics but also, as associate members, of many who are of the Protestant and Jewish faiths.

The NCSAW is represented here today to testify to the need of laboratory animals for protection and to urge that any bill reported by this committee be adequate to insure a major reform of the conditions under which millions of animals are used each year for experimental purposes. A little later in my testimony I will give the NCSAW's specific recommendations on legislation.

But first, Mr. Chairman, please permit me briefly to state the reasons why the enactment of legislation by the Congress is so urgently indicated.

NEED OF ANIMALS FOR PROTECTION

1. The vast numbers of animals used experimentally now are without adequate protection under existing laws. It is true that every State has declared cruelty to animals to be illegal. But 10 of the State anticruelty laws specifically exempt cruelty to animals in laboratories and 1 additional State

provides that a search warrant may not be granted to investigate cruelties in laboratories. The effect of such exemptions is that a private citizen may be prosecuted for housing an animal under inhumane conditions or for such a flagrant cruelty as burning, beating, starving, or crushing an animal but any one carrying out the same act in the name of science may do so with the full protection of the law. Professional status thus protects the person who cruelly treats an animal but it in no way lessens the suffering of the animal which knows the same degree of pain whether it is burned, beaten, or otherwise abused by a layman or by a scientist.

Even in the States in which the anticruelty laws contain no exemption for experimentation, the laws are hopelessly inadequate to grant any protection to laboratory animals. The number of humane agents (representatives of humane organizations having the power to arrest) is not sufficient to inspect the hundreds of laboratories across the country. Unannounced inspection of laboratories is rarely possible. Having no guide to the humane treatment of animals in laboratories, the courts are unlikely or unwilling to convict a researcher under the State anticruelty laws.

2. A parallel to the need of laboratory animals for protection by Federal law was the condition that led to enactment in 1958 of a Federal humane slaughter law. The State anticruelty laws were ineffective to achieve the protection of meat animals from inhumane, archaic slaughter methods. In the case of laboratory animals, the need is even greater for a separate, unambiguous, definitive, and enforceable law. When hundreds of millions of animals are used by an industry or a profession each year and there is evidence of wholesale abuse, as there is in the case of laboratory animals, the reasons are obvious why remedial legislation with adequate enforcement provisions should be enacted by the Congress.

As the most telling evidence of the need of laboratory animals for protective legislation that will prevent their abuse and suffering, I wish to provide the committee with a few examples of the experiments to which animals are subjected in modern day research. This material, fully documented, is from the researchers' own reports in medical journals:

Conclusion induced in conscious or partially conscious animals in a variety of ways. At the University of Michigan Medical Center and the Aero Space Medical Laboratories at Wright Field,[1] "cats were struck * * * by a pneumatic hammer driven by compressed nitrogen" after receiving Dial in "a dosage which reduced the motor activity and facilitated handling of the cats, but did not render them unconscious."

At the St. Louis University [2] concussion was produced "by one of the following methods: (*a*) multiple blows to the head with a 16-ounce hammer; (*b*) the electrical detonation of a DuPont number 6 blasting cap taped to the surface of the animal's scalp." Only "light Nembutal anesthesia" was used. "Ball peen hammers of various weights were used for the administration of blows" to the heads of dogs at Wayne University.[3]

The Blalock Press is one of the many methods and devices for causing traumatic shock and excruciating pain in animals. As used at Johns Hopkins,[4] "the pressure which was transmitted to the thigh was approximately 500 pounds." In a typical experiment "* * * the press was applied for 5 hours and no form of therapy was carried out after its removal." In other experiments the press was applied for 15 hours. The Blalock Press, which has also been used at the University of Rochester,[5] among other institutions, is illustrated here (illustration A.). This ingenious device consists of ridged jaw boards containing a central groove corresponding to the position of the animal's femur, so that complete muscle crushing can be obtained. Pressures as great as 4,000 pounds have been used.

At Columbia University,[6] as many as 1,000 blows on each leg of dogs were administered by a rawhide mallet to induce shock. Nervous depression, gasping, thirst, and vomiting—not to mention the agonizing pain of crushed muscles, nerves, and bones—were some of the effects of the beatings. The researchers who performed this experiment stated that three dogs which survived shock resulting from the beating suddenly expired "the following day when they were again placed upon the animal board."

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[1] Archives of Neurology, 4: 449–462, April 1961.
[2] Journal of Neurosurgery, 172: 669–676, 1960.
[3] Neurology, 3: 417–423, 1953.
[4] Surgery, Gynecology, and Obstetrics, vol. 75, 4: 401, October 1942.
[5] Journal of Clinical Investigation, vol. 24, 2: 127, March 1945.
[6] American Journal of Physiology, 148: 98–123, January 1947.

Although reports of trauma induced by blows of mallets to the legs of dogs go back to the 1930's and perhaps even farther, one finds that the same method is still being used. At the Albany Medical Center,[7] for example, 50 blows of a leather-covered mallet to each hind leg for each 10 pounds of body weight were described in an article published early this year. This experiment, like many of the others we are citing, was supported by the taxpayers' money, which obviously is generously and wastefully spent for an endless repetition of experiments.

Fasting, as long as 30 days in the case of dogs, exposure to severe cold; enforced swimming for 1 hour and enforced running in a treadmill for 1 hour; anoxia, surgical trauma, and emotional distress are the methods used for inducing stress in dogs, guinea pigs, and rabbits at Creighton University.[8] The researchers state proudly that "intensive emotional tension was created in these guinea pigs by tying them down to a board during the first testing, and in the rabbits by placing them in the treadmill for 10 minutes, a procedure which upset them beyond measure." Such stress is applied for the study of the resulting changes in capillary resistance. Humans, however, do not ordinarily fast for 30 days, nor are they subjected to enforced swimming or exercise in a treadmill. How the results of these studies can be applied to humans is as difficult to understand as is the expenditure of the taxpayers' money for such experiments.

At the same institution,[9] dogs were fasted for as long as 65 days in an experiment performed 3 years earlier to evaluate the factors responsible for the reactions of haphazard realimentation after severe starvation. The facts already established as a result of the suffering of prisoners of war who had been starved were thus studied again, and for what purpose could well be asked. The researchers report that when the animals were given food after severe starvation, they "often appeared ill or in pain." Convulsions, marked diarrhea often lasting for several weeks, and vomiting were among the results of realimentation after severe starvation. Surely these reactions are already well known to the research profession if they have read, as even laymen have, of the experiences of prisoners of war when they were given food after prolonged starvation.

Researchers frequently state that laboratory animals receive the same care as humans would after similar injuries or surgical procedures. The medical journals, however, are filled with reports that animals have received absolutely no treatment after mutilating injuries, major surgery, severe burns, and other experiments that produce severe pain and suffering. At Tulane University and the University of Rochester,[10] for example, 43 dogs were subjected to scalding burn covering approximately 70 percent of the body surface inflicted by lowering them into a container filled with water at temperature of 85 C. a temperature just 15 degrees below the boiling point of water. A 6-hour chart following the burning shows that 13 dogs received no treatment; a 24-hour chart shows that 5 dogs received no treatment. At the University of Mississippi,[11] a typical burn experiment shows that 30 rats were immersed in water at 70 C. The animals were then divided into three groups of which one group received no treatment.

A "Symposium on Burns"[12] describes some of the variety of ways in which animals are burned: by gasoline, flamethrowers, burning irons, and for internal burns, by inhalation of hot dry air and steam. At Harvard's Department of Legal Medicine, the symposium reports, a concrete fireproof room was constructed, gasoline in shallow pans completely covered the floor and was ignited by an electric spark. "Pigs were laid on a grate about 2 feet over the pan. Air temperatures as high as 900° C. were obtained for very brief periods."

The device illustrated (B) here is for the infliction of large area flame burns at 1,000° C. (equal to 1,832° F.) on animals. At the Army Chemical Center, Md., flamethrowers have been used on goats. Burns also were inflicted in goats subjected to fire bomb attack while the animals were tethered in slit trenches. A researcher who has burned dogs by means of burning irons held to their shaved skin for 1 minute reported in the aforementioned "Symposium on Burns" that "we began a study on a series of dogs that were irradiated with 100 total body irradiation, in addition to the 20 percent body surface burn * * *

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[7] Animals of Surgery, vol. 155, 1: 140, January 1962.
[8] Proceedings of the Society for Experimental Biology and Medicine, 89: 528–533, 1955.
[9] American Journal of Physiology, 169: 248–352, April 1952.
[10] Surgical Forum, 10: 346–351, 1959.
[11] Surgical Forum, 10: 343–346, 1959.
[12] "Symposium on Burns," Nov. 2–4, 1950, National Research Council.

we do not know of any practical method of irradiating these dogs and burning them at the same time in the laboratory, which is the goal we would like to achieve."

There is even a "Standardized Back Burn Procedure," developed by a researcher at the University of Pennsylvania [13] for immersing rats (illustration C) in water only a few degrees below the boiling point.

Such blistering agents as lewisite (poison gas) have been applied to the skin of rabbits (illustration D) tied to animal boards. The researcher reports that "damage from relatively large doses * * * may penetrate deeply into the muscles and even to and into the viscera beneath. Healing takes 5 to 7 weeks." Thousands of rabbits have been used, according to reports of experiments pertaining to chemical warfare medicine.[14] Although animals have been subjected to the agonizing effects of inhaling lewisite (poison gas) vapor, the researcher states in the report on chemical warfare medicine that "It is unlikely that it would be an important hazard under field conditions" since even a low concentration of poison gas is highly irritating and men would have an opportunity to put on masks affording complete protection against the gas.

We come now to some of the methods by which animals are tormented by an amazing variety of "noxious stimuli" or to put it plainly, stimuli that hurts. At Cornell University,[15] researchers destroyed the sight, hearing, and sense of smell in cats and then for a period of 10 years applied such stimuli as (*a*) electric shocks delivered via a metal grid covering the floor, (*b*) blows to the face with a plastic fly swatter, and (*c*) pinching of the tip of the tail.

At the University of Oregon [16] noxious stimulation was applied to cats by means of a "noxious level of heat in wires on the floor * * * and (*b*) pin prick." The responsiveness of some of the animals to the pricking of their paws would cause them "to leap into the air and frequently hit the top of the test apparatus. If they landed on the pins, they would jerk their paws aside vigorously every contact, sometimes even trying to balance on the forepaws with the hindpaws up in the air."

Since 1928 researchers at Johns Hopkins University [17] have been inducing rage, fear, and other manifestations of distress in cats. In a typical study, the researchers report: "We pinched their tails, their feet, and their ears. We picked them up by the loose skin of their backs and shook them. We spanked them and determined their responses to restraint." Postoperatively, "quite intense and prolonged nociceptive stimuli were applied * * *. Such procedures as tying her in the dorsal decubitus on an animal board, picking her up by the loose skin of the back and vigorously shaking her, spanking her or pinching her tail as hard as possible between thumb and forefinger elicited only a few plaintive meows. When her tail was grasped between the jaws of a large surgical clamp and compressed sufficiently to produce a bruise she cried loudly and attempted to escape * * *. During the 139 days of survival she was subjected, every 2 or 3 days, to a variety of noxious stimuli * * *. On one occasion her tail, shaved and moistened, was stimulated tetanically through electrodes connected with the secondary of a Harvard inductorium the primary circuit of which was activated by 4.5 volts. When the secondary coil was at 13, she mewed; at 11 there was loud crying * * * at the end of the 5-second stimulation with the secondary at 5 she screamed loudly and spat twice. The last of these stimulations produced a third-degree electrical burn of the tail."

Methods of inducing conditioned reflexes in animals are reported extensively in medical journals. Electrical shocks are by far the most popular method but burning irons, sharply pointed objects and other implements designed to cause pain and fear also are used. At the Jackson Memorial Laboratory,[18] 25 newborn puppies were tested for conditioned avoidance responses to electric shock applied to the forelegs, using sound, light, odor, and contact as stimuli. "Cloth strips soaked in salt solution were tied around each forelimb and attached to leads from an induction coil" to produce shocks. When electric shock was applied to rats at Cornell University,[19] some rats "showed extreme fear of the experimenter after biting him. Some would not enter the adaptation apparatus and, if forced in, would refuse to eat, and do nothing but scramble up the walls."

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[13] Journal of Laboratory and Clinical Medicine, 302: 1027–1033, 1945.
[14] Fasciculus on Chemical Warfare Medicine, 1945.
[15] Archives of Neurology, 1: 203–215, 1959.
[16] Journal of Neurophysiology, 21: 353–367, 1958.
[17] Proceedings of the Association for Research in Nervous and Mental Diseases, 27: 362–399, 1948.
[18] American Journal of Physiology, 160: 3, March 1960, pp. 462–466.
[19] Annals of New York Academy of Sciences, vol. 62, art. 12, pp. 277–294.

Swinging dogs to induce vomiting is a popular activity at Columbia University [20] where a motor-driven swing having a frequency of 13 complete swings per minute was used in a typical experiment. The researchers note that "dog 112 also had severe mange infection." And then, there is the Noble-Collip drum (illustration E) for inducing shock in animals by rotating them. At New York University-Bellevue Medical Center,[21] for example, rats were subjected to 600 revolutions. In some institutions, projections have been added to the interior of the drum to bump the animals as they are drummed. To prevent the animals from trying to jump over the projections as they are mercilessly drummed or rotated, their front feet are taped together. Such injuries as fractured skulls, hemorrhages, broken teeth, bruised livers, engorgement of bowels, kidneys, lung, rectum, duodenum and stomach result from the drum and similar rotating devices.

There are a great variety of devices for restraining fully conscious animals during experiments that cause animals intense fear and pain. The Ziegler monkey chair (illustration F) is used to restrain, fully conscious, these highly sensitive animals while stimulation of the brain is carried out under only local anesthetics, for the implantation of cranial windows and for similar procedures that cause great fear and distress. A restraining device designed at the State College of Washington [22] is a modification of a National Institutes of Health chair. Monkeys have been restrained for as long as 5 months in the device (illustration G) according to the researcher who states: "We have maintained monkeys in the chairs continuously for periods of 2 to 5 months * * *."

A restraining box (illustration H) designed at the Research and Development Center of the American Can Co.[23] is used for the feeding of monkeys by stomach tube. The unfortunate animal shown here (illustration I) is restrained and forced to press a lever almost constantly to reduce the intensity of painful electrical stimulus. The paper describing the experiment at Walter Reed [24] is entitled "A Behavioral Method for the Study of Pain Perception in the Monkey." The title itself contradicts the claims of researchers that experimental animals are not subjected to pain.

Monkeys have been restrained for as long as 15 months "continuously day and night" in the device shown here (illustration J) and used at the National Institutes of Health.

Dogs, cats, monkeys, and rabbits are restrained in the device (illustration K) described by a researcher at the Chemical Warfare Laboratories of the Army Chemical Center, Maryland, for as long as 24 hours.

The few examples I have given of the suffering inflicted without limit on laboratory animals do not begin to give a cross section of the variety of experiments. It would take days of testimony to describe, even in the briefest form, the atrocities that are routine in research today. Animals are truly beaten, starved, burned, frozen, blinded, drowned, forced to swim and run until they die, accelerated, deprived of sleep, irradiated, skinned, and subjected to other methods of inducing pain and fear in infinite variety.

The suffering of animals used in research today is not limited to that inflicted during experimentation. Often after undergoing burning, major surgery, the crushing of muscles, and the breaking of bones, and other mutilating and painful injuries, they are given little or no postexperimental care to relieve their pain and fear. In most laboratories the animals are simply returned to a wire-bottom cage to suffer, unattended.

It is not unusual to find animals housed in cramped cages, without even a solid place on which to sit or lie, for as long as 5 or even 10 years. They are deprived of exercise, sunlight, companionship. They may in some cases be forced to lie in their own filth. The food offered them may soon be covered with roaches. They are truly imprisoned under conditions under which civilized people would not dream of housing criminals guilty of the most heinous crimes. I will not comment further on the shamefully inhumane conditions under which animals are housed or on the cruel neglect of postexperimental care as witnesses for the Humane Society of the United States will adequately cover that aspect of the need of laboratory animals for protective legislation.

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[20] American Journal of Physiology, 178 : 111–116, 1954.
[21] American Journal of Physiology, 198 : 501–506.
[22] Proceedings of the Animal Care Panel, 7 : 127–137, 1957.
[23] Toxicology and Applied Pharmacology, 1 : 443–445, 1959.
[24] Neurology, 12 : 4, pp. 264–272, April 1962.

NCSAW VIEWS ON LEGISLATION

I should now like to state the views of the National Catholic Society for Animal Welfare on legislation for the protection of animals. Following is a pertinent part of a resolution adopted by the society's board of directors in July 1960:

"The increasing volume and intensity of animal suffering resulting from practices that exceed the limits of licitness in experimentation, causing it frequently to degenerate into a mere torturing of animals, leads the National Catholic Society for Animal Welfare to believe that legislation governing the use of animals for experimental purposes is urgently needed. Laws to compel medical researchers to abide by the same standards of conduct expected of private citizens toward animals are indicated."

At the same time the NCSAW board of directors expressed its stand on a bill that has since died but to which H.R. 1937 is almost identical. We stated that "existing legislation similar in many respects to [the bill] has served not to protect animals but to lead the public mistakenly to believe that the use of animals for experimental purposes is controlled and cruelty and suffering are prevented. Such legislation serves, as it were, only to anesthetize the public conscience rather than to prevent animal suffering."

We found that we could not support a bill such as H.R. 1937 because its many serious weaknesses render it ineffective.

Briefly, our objections to the bill are as follows:

1. It calls for self-policing and self-policing will not work.

2. It fails to make an unequivocal statement about the most basic protection needed for laboratory animals. For example, section 3(c) states that animals "shall be anesthetized so as to prevent the animals feeling the pain during and after the experiment" but that requirement is immediately nullified, in the same sentence, by an exception if anesthetics would frustrate the object of the experiment. That exception would permit the most excruciatingly painful experiments without anesthesia and with the blessing of the law. Similarly, section 3(c) states that animals which are seriously injured as a result of the experiment shall be painlessly killed immediately upon the conclusion of the operation inflicting the injury. But that requirement is nullified by an exception if the project plan specifies a longer period during which animals must be kept alive. Thus the two must urgently needed requirements of any bill protecting laboratory animals from severe and prolonged suffering are lacking in the Griffiths bill.

The Griffiths bill has been compared to the British Cruelty to Animals Act and offered as a panacea for all the cruelty and suffering to which laboratory animals are subjected. The British act, however, has not served as a cure-all and the Griffiths bill is even weaker. The widely respected Royal Society for the Prevention of Cruelty to Animals calls the British act "an act that doesn't act" and states: "An act to prevent cruelty to animals has been turned into an act to allow almost unlimited and uncontrolled experiments on animals."

We wish to insert in the record at this point a leaflet published by the Royal Society for Prevention of Cruelty to Animals and entitled "Cruelty Within the Law," in which the reasons why the British act, after which the Griffiths bill (H.R. 1937) is patterned, does not work are given.

MOULDER BILL

The National Catholic Society for Animal Welfare considers the Moulder bill (H.R. 3556) to be reasonable, workable, and effective legislation in all respects but one. Our objection is to the phrase "unless the project plan approved by the Commissioner states that anesthesia would frustrate the purpose of the project" which will be found on lines 1, 2, and 3 of page 8, section 12(b) of the bill. The phrase vitiates an otherwise excellent bill and would permit the continental infliction of intense and prolonged suffering in animals without the relief of anesthesia. We humans are quick to demand for ourselves the protection of anesthesia from the most minor discomforts of medical or dental processes. Can we, in conscience, withhold the basic decency of anesthesia from the sentient creatures exploited in growing numbers in research and subjected to every form of pain and fear that the human mind can conceive?

The National Catholic Society for Animal Welfare feels so strongly about the need for a clear requirement for anesthesia that it can support H.R. 3556 only, if lines 1, 2, and 3 of page 8 are struck out.

In all other respects we consider the Moulder bill (H.R. 3556) to be the answer to the need for legislation establishing humane standards for the care, housing, and use of animals in research. The bill provides for a sorely needed new Federal agency to administer and enforce the humane standards.

There are those who will try to defeat the Moulder bill on the ground that it would be costly to administer. The entirely new agency which it would establish and the administration of the proposed law, however, would require less than half a million dollars a year in the view of the Humane Society of the United States at whose request the bill was introduced. That modest amount would represent only 1/2,448th of the National Institutes of Health appropriation for research grants for fiscal 1963. I am confident that the merciful people of this country think that the protection of millions of animals from cruelty and suffering in research is worth 1/2,488th of the annual budget for research.

LEGISLATION TO PREVENT DUPLICATION AND REPETITION

In addition to the suffering caused laboratory animals by neglect, callous indifference, and plain cruelty, both animal suffering and waste of the taxpayers' money are caused by duplication and repetition of research projects. Duplication and repetition occur because existing clearinghouse facilities, providing information and conclusions on projects already researched or in progress, are very little used. For example, only 30,000 active projects are registered with the Bio-Sciences Information Exchange, according to the Senate Subcommittee on Reorganization and International Organizations which has made a searching study of coordination of activities of Federal agencies in research. The subcommittee found that in 1959 only 520 subject-type inquiries were made to the Exchange from all supporting agencies and only 130 from nonsupporting Government agencies. In other words few of the thousands of researchers in this country cared enough to inform themselves of past and current research on the very projects in which they are engaged.

On the basis of published reports of research projects alone, it is obvious that experiments are senselessly and wastefully repeated and duplicated. The consequent waste of the taxpayers' money and suffering of laboratory animals cannot possibly be justified. Both will continue until there is legislation compelling the use of clearinghouse facilities to prevent researchers from embarking on projects already exhaustively studied. The current repetition and duplication of projects is as grossly unscientific as it is wasteful of animals and money.

Section 12(a) of the Moulder bill (H.R. 3556) provides for reduction of the number of animals by means of the application of statistical techniques, a very necessary provision. However, so urgent is the need to prevent duplication and repetition in research that we believe supplementary legislation which would insure the fullest possible enforcement of section 12(a) of the Moulder bill is indicated.

The reasons for preventing repetition and duplication in research are threefold:

(1) to prevent the unjustifiable infliction of suffering in animals that occurs when animals are senselessly used in projects already conclusively studied;

(2) to insure the most useful investment of the researchers' time and effort, thus serving the interests of science itself;

(3) to prevent the waste of the taxpayers' money that occurs when researchers duplicate or repeat the work of others simply because they are too lazy or indifferent to inform themselves of work already done or in progress.

We recommend legislation that would:

(*a*) Expand existing clearinghouse facilities such as those of the Bio-Sciences Information Exchange;

(*b*) Require every researcher receiving Federal grants to provide a central clearinghouse with a detailed description of his project and the conclusions reached;

(*c*) Require approval of applications for Federal research grants on the basis of full use of the clearinghouse facilities.

In summary the National Catholic Society for Animal Welfare:

(1) Believes that legislation for the humane treatment of laboratory animals is urgently needed to prevent their abuse and misuse.

(2) Supports the Moulder bill (H.R. 3556) provided that lines 1, 2, and 3 of page 8, being the phrase "unless the project plan approved by the Commissioner states that anesthesia would frustrate the purpose of the project," are deleted;

(3) Recommends additional legislation providing for expansion of existing clearinghouse facilities to prevent duplication and repetition of research projects by requiring full use of clearinghouse facilities before the approval of applications for Federal research grants.

(The leaflet, "Cruelty Within the Law," follows:)

A.93

Cruelty within the Law

FACTS ABOUT EXPERIMENTS ON LIVE ANIMALS

Issued by The Royal Society for the Prevention of Cruelty to Animals, 105 Jermyn Street, London, S.W.1.

An ACT that *doesn't* act!

THE CRUELTY TO ANIMALS ACT, 1876

In the latter part of the nineteenth century, leaders of public opinion were more concerned with suffering resulting from experiments on live animals than they are today. Queen Victoria, Lord Tennyson, Lord Shaftesbury, Charles Darwin and many others spoke strongly on the subject. Auberon Herbert, M.P., had a letter published in *The Times* which aroused widespread feeling, and when his brother, the Earl of Caernarvon, sponsored the Cruelty to Animals Bill, the ground had been so well prepared that Parliament passed the Act only a few months later in 1876.

The Act prohibits experiments on animals that will cause pain, unless the experiment is deemed necessary for adding to medical knowledge which may alleviate suffering, or save or prolong life. Even then, the experiment must be carried out under anaesthetic, and the animals destroyed before coming round if pain will follow.

The Act also requires that experiments must be performed in a registered place, and the experimenter must hold a licence issued by the Home Secretary. Experiments must not be carried out to illustrate lectures or to obtain manual skill.

The original intention of the Act was clear and reasonable **but** it was felt necessary to allow certificates to be issued permitting the absence of anaesthetics under certain conditions. The certificates are sponsored by people few of whom have practical knowledge of veterinary matters. It is in the use of these certificates that the intention of the Act has been grossly abused. **An Act to prevent cruelty to animals has been turned into an Act to allow almost unlimited and uncontrolled experiments on animals.**

What goes on today behind closed doors

In 1960 there were 3,701,187 experiments. Of these 3,345,464—nine out of ten—**were without anaesthetics** and by law should therefore be absolutely essential to the advancement of medical knowledge which will prolong or save life, or alleviate suffering. Of the remaining 355,723 anaesthetised animals, **only 51,560 were destroyed,** as required by the Act, before coming round.

MANY ANIMALS ARE INOCULATED WITH VIRULENT DISEASES WHICH DO NOT NECESSARILY CAUSE DEATH, BUT WEEKS OF LINGERING PAIN INSTEAD. SOMETIMES THEY ARE INOCULATED IN THE EYES. FEEDING EXPERIMENTS INCLUDE STARVATION, PARALYSIS AND CONVULSIONS. ANIMALS ARE DEPRIVED OF SLEEP TO AN EXCESSIVE DEGREE AND EXPOSED TO POISON GAS.

THE ACT WAS OBVIOUSLY INTENDED TO PREVENT CRUELTY TO ANIMALS BUT, IN FACT, ALLOWS GRAVE FORMS OF CRUELTY. IT IS ALMOST INCREDIBLE THAT THERE HAS NOT BEEN A SINGLE PROSECUTION SINCE 1876.

Experiments inadequately controlled

The R.S.P.C.A. is not opposed to experiments involving vivisection, but to **cruelty to animals during experiments**—especially when it is unnecessary and therefore, in the express terms of the Act, illegal.

This is because THE 1876 ACT IS NOT BEING ADMINISTERED PROPERLY, and the experiments are inadequately controlled.

In 1876 there were 300 experiments a year, supervised by two inspectors. Now there are nearly 4,000,000 experiments, and only six inspectors. Worst of all, these INSPECTORS DO NOT INSPECT OR SUPERVISE 1% OF THE EXPERIMENTS. Nor do they have adequate knowledge of veterinary anaesthesia—a very specialized branch of anaesthetics—although the Act lays great stress upon conditions requiring them.

The inspectors are mainly concerned with issuing licences and certificates, and inspecting premises and applicants. They rarely question the need for experiments; nor have they veterinary knowledge to ease the suffering of animals allowed to recover from the effects of anaesthesia. **These facts prove that the present administration of the Act is completely out of date.**

R.S.P.C.A. DEMANDS REFORMS

1. No experiment or series of experiments should be carried out without *previous* application being completed and thoroughly checked **both for the need for the experiment and the actual procedure of carrying it out.**

2. The function of the inspectorate should be:—
   (a) To license premises and to have personal knowledge of the experimenters.
   (b) To examine applications for experiments and pass them only when they are satisfied that the real intention of the Act is observed, i.e. that the experiment will help to solve a specific medical problem.
   (c) To watch personally a reasonable proportion of the experiments carried out to ensure that the minimum of pain is inflicted and that the animal is destroyed before coming round from the anaesthetic except in very clearly defined circumstances. At present the decision to destroy is left entirely to the personal whim of the experimenter, quite regardless of his feelings for animal suffering or his knowledge of veterinary problems.
   (d) To ensure that experiments are not repeated unnecessarily.

3. The inspectorate should include persons with veterinary experience and knowledge and all inspectors should have periodical veterinary courses. This would ensure that the most modern veterinary anaesthesia and surgery techniques are used.

4. The Advisory Council should be an **executive** body who should give decisions to the inspectorate on all applications for experiments which are of unknown value. The Council should include at least three veterinary surgeons and two representatives of animal welfare societies.

Mr. ROBERTS. Thank you very much. I would like to ask you just one question. That is, in what way do you arrive at the cost of the Moulder bill?

Miss JONES. In discussing it with the proponents of the bill, Humane Society of the United States, we asked them what their feeling was, since they are the authorities in the animal welfare field on this bill, and the cost of its administration. And from the sum they mentioned, we determined it would be that small proportion of the NIH appropriation for 1963.

Mr. ROBERTS. I was interested, because this is really the first estimate we have had as to the cost, which of course would be an important consideration.

Miss JONES. Yes. Well, it would be very modest, indeed.

Mr. ROBERTS. Thank you very much.

(The following illustrations were submitted for the record by Miss Jones:)

ILLUSTRATIONS

A. The Journal of Clinical Investigation, 24: 2, page 127, March 1945.
B. Symposium on Burns, National Research Council, November 2–4, 1950.
C. Journal of Laboratory and Clinical Medicine, 302: 1027–1033, 1945.
D. Fasciculus on Chemical Warfare Medicine, volume 3, 1945.
E. Quarterly Journal of Experimental Physiology, volume 31, page 187, 1942.
F. Journal of Laboratory and Clinical Medicine, volume 40, No. 3, September 1952.
G. Proceedings of the Animal Care Panel, 7: 127–137, 1957.
H. Toxicology and Applied Pharmacology, 1: 443–445, 1959.
I. Neurology, volume 12, No. 4, pages 264–272, April 1962.
J. Journal of Applied Physiology, page 135, January 1958.
K. Journal of Applied Physiology, volume 12.

ILLUSTRATION A

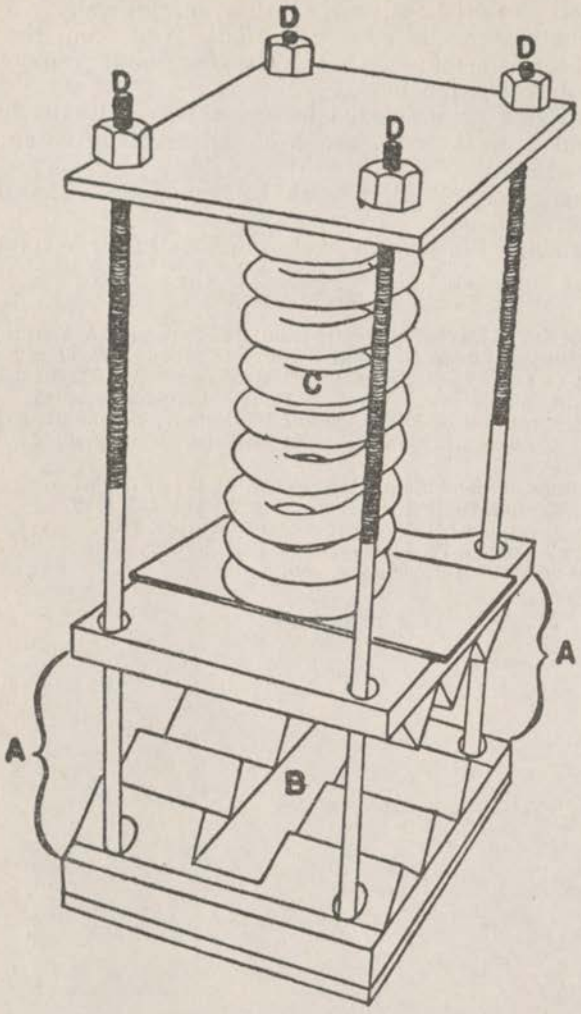


FIGURE 1.—THE MODIFIED BLALOCK PRESS.

The dog's thigh is placed in the space marked *A*. *B* is a groove to accommodate the femur. *C* is a calibrated knee action spring (from a Buick car). The desired pressure is exerted on the thigh by screwing down the bolts, *D*, until the spring has been compressed the requisite amount.

ILLUSTRATION B

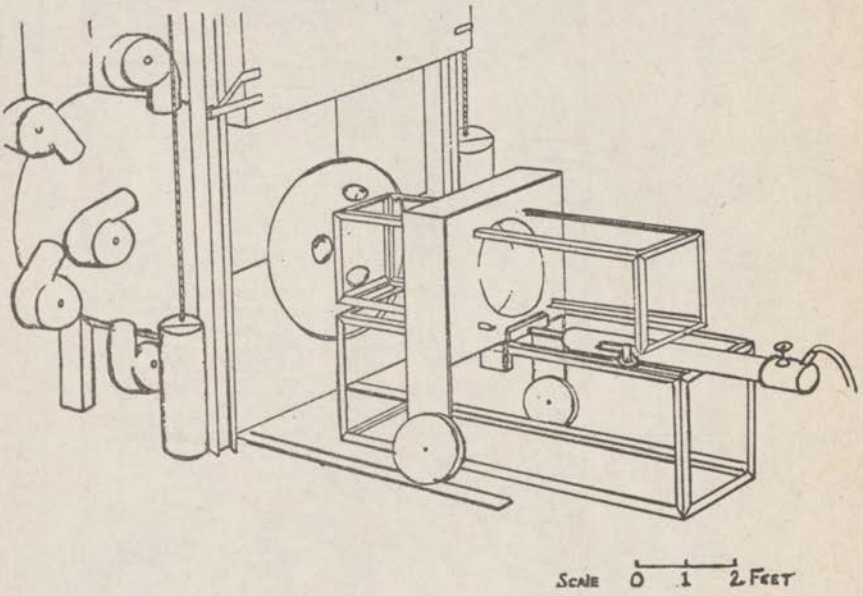


FIGURE 6.—APPARATUS FOR THE PRODUCTION OF EXPERIMENTAL FLAME BURNS.

It was found that either low oxygen, heat, or carbon monoxide alone could kill in a few minutes. In combination the lethality of all factors was increased.

An apparatus was devised for production of large area flame burns at 1,000° C. (fig. 6). Observations on animals burned under these conditions confirmed the observations of Moritz. Some animals died of the cardiac effects of potassium. Others exposed over a large area for brief periods of time died of sudden circulatory failure.

In summary, heat, carbon monoxide, and hypoxia are adequate to cause death under these conditions. It is not necessary to postulate other toxic factors.

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ILLUSTRATION C

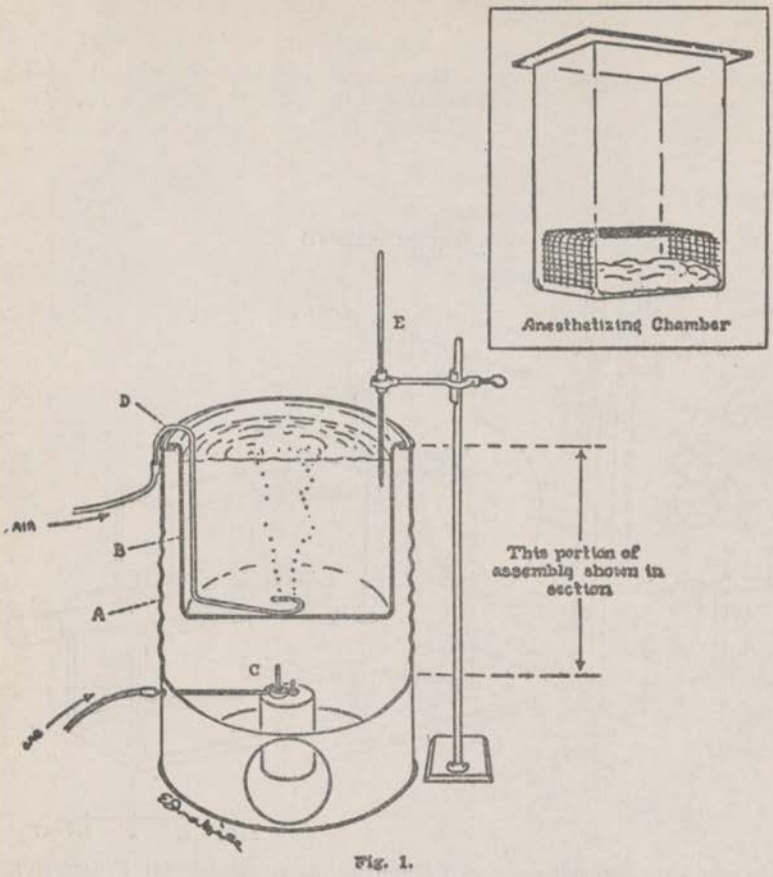


Fig. 1.

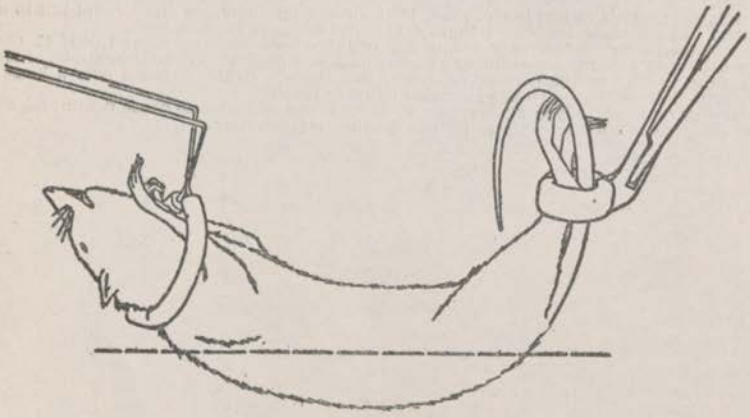


Fig. 2.

ILLUSTRATION D

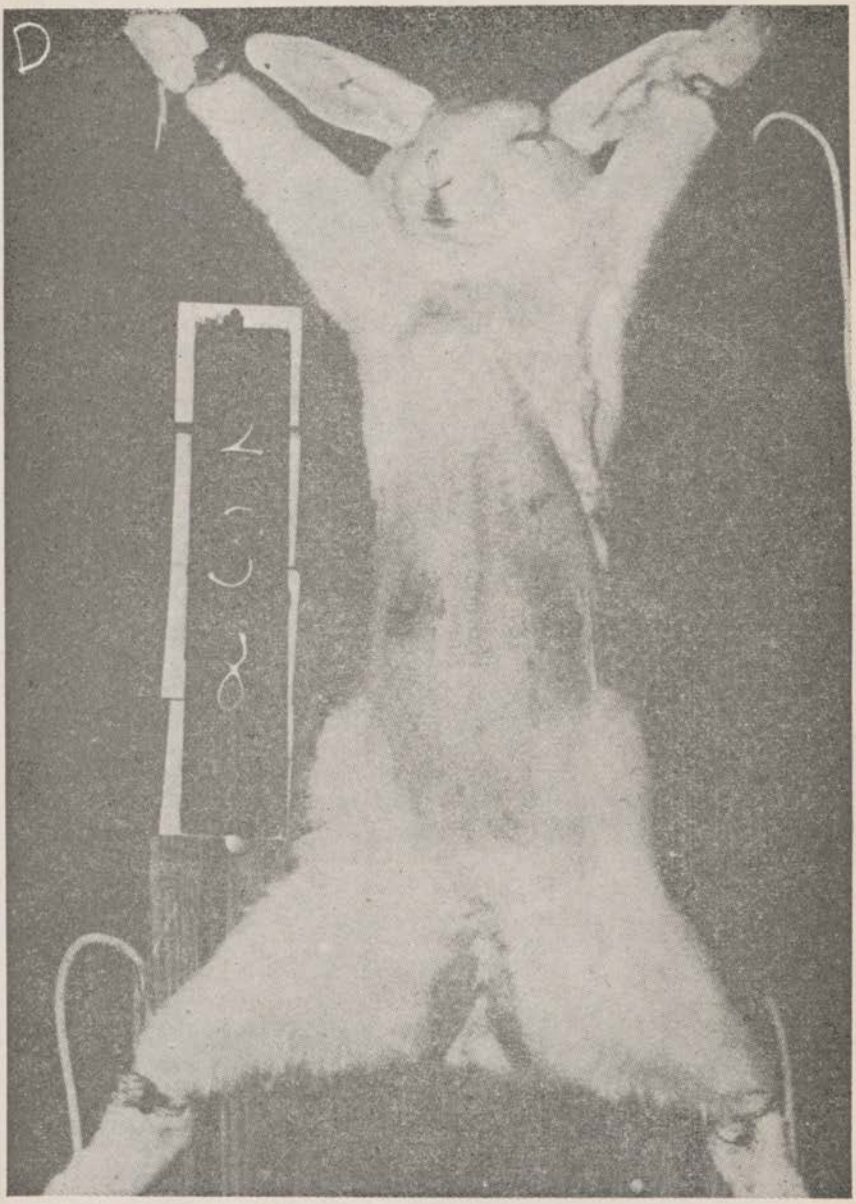


FIGURE 13.—Comparison of effects of liquid lewisite and liquid phenyldichlorarsine: 1.8 milligrams lewisite at left of photo; 1.8 milligrams phenyldichlorarsine at right. No treatment. (Photo at 3 days.)

ILLUSTRATION E

THE NOBLE-COLLIP DRUM

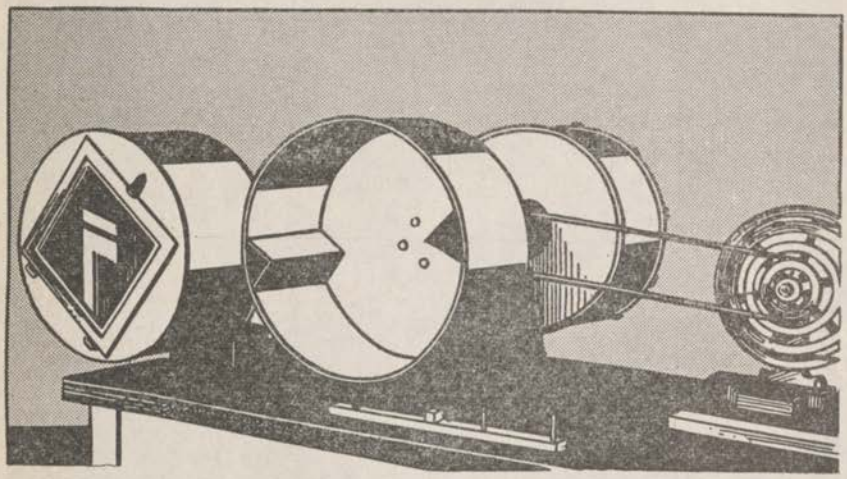
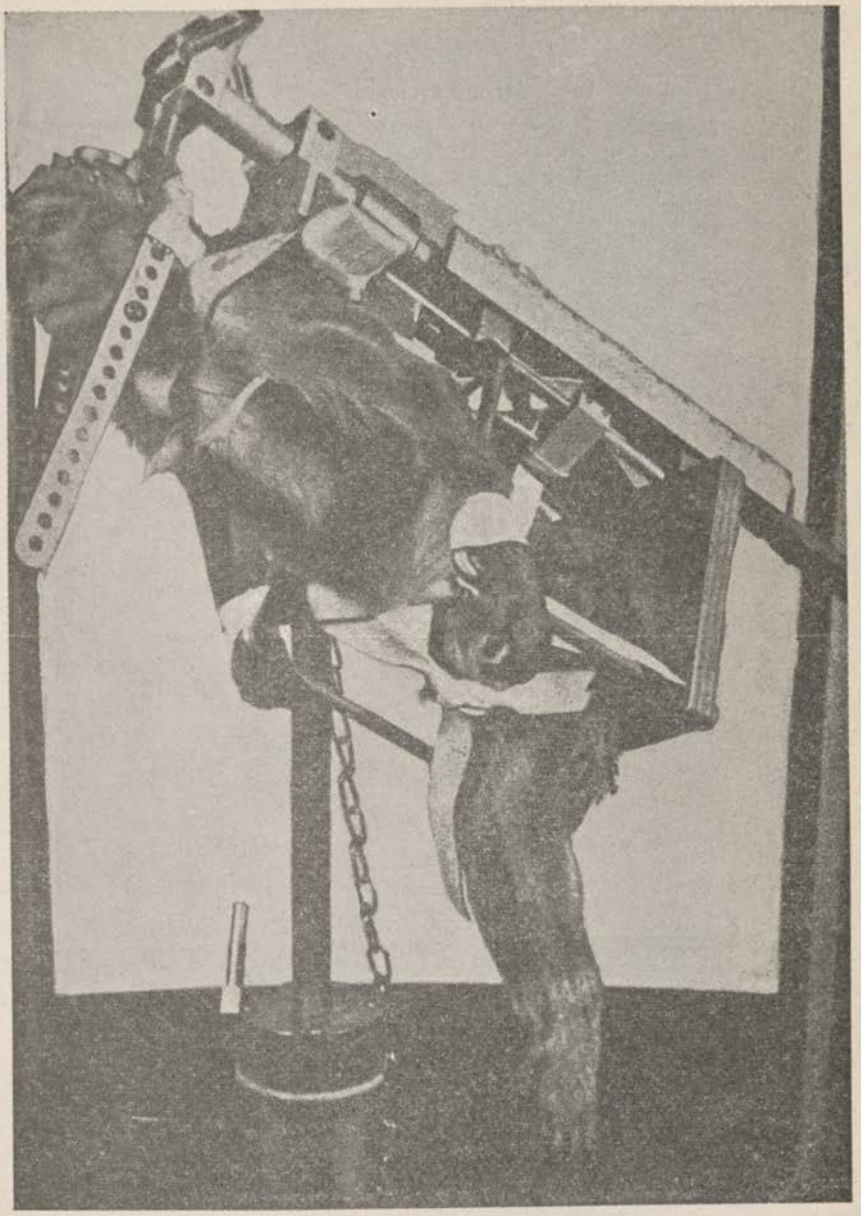


ILLUSTRATION F



THE ZIEGLER MONKEY-CHAIR

Illustration from the Journal of Laboratory and Clinical Medicine, vol. 40, No. 3. September 1952. (Reproduced by permission).

ILLUSTRATION G

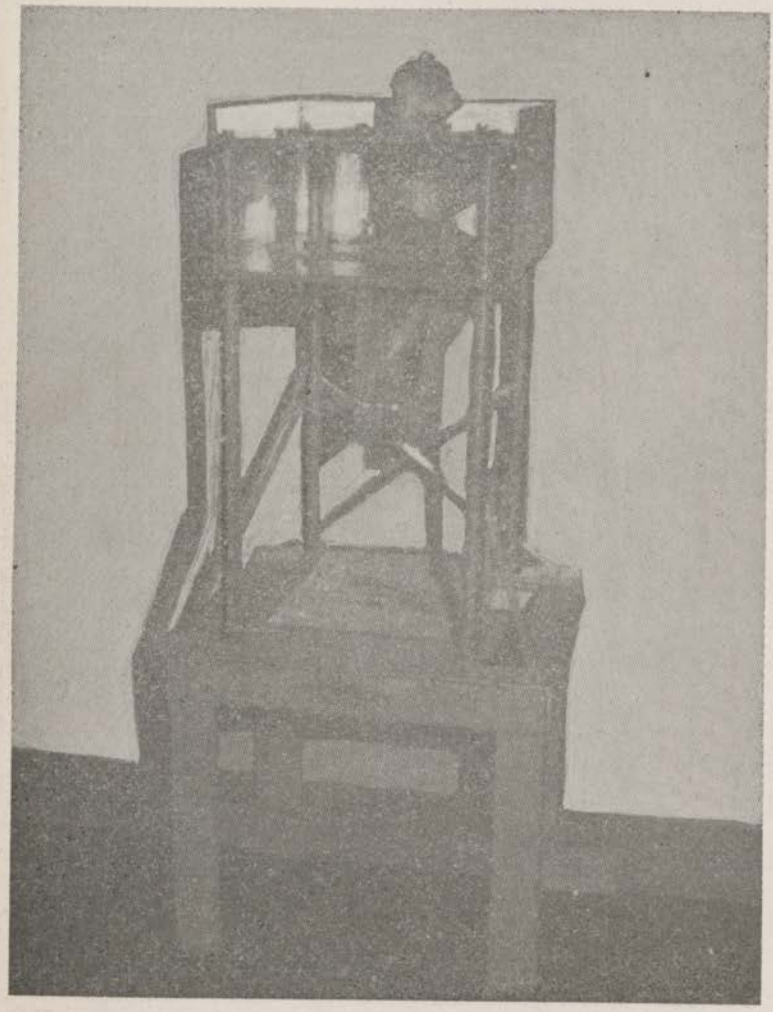


FIGURE 4

A single unit base and chair with a monkey in position.

ILLUSTRATION H

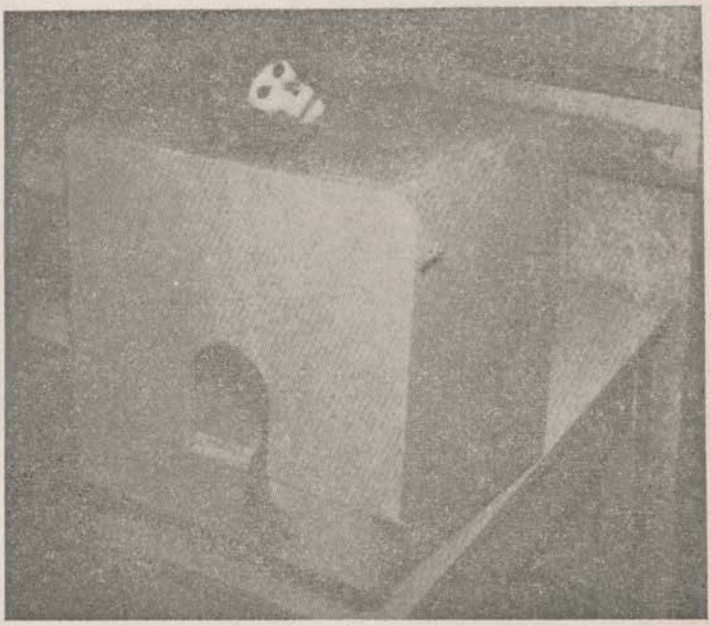


FIGURE 2

Monkey in restraining box.

ILLUSTRATION I

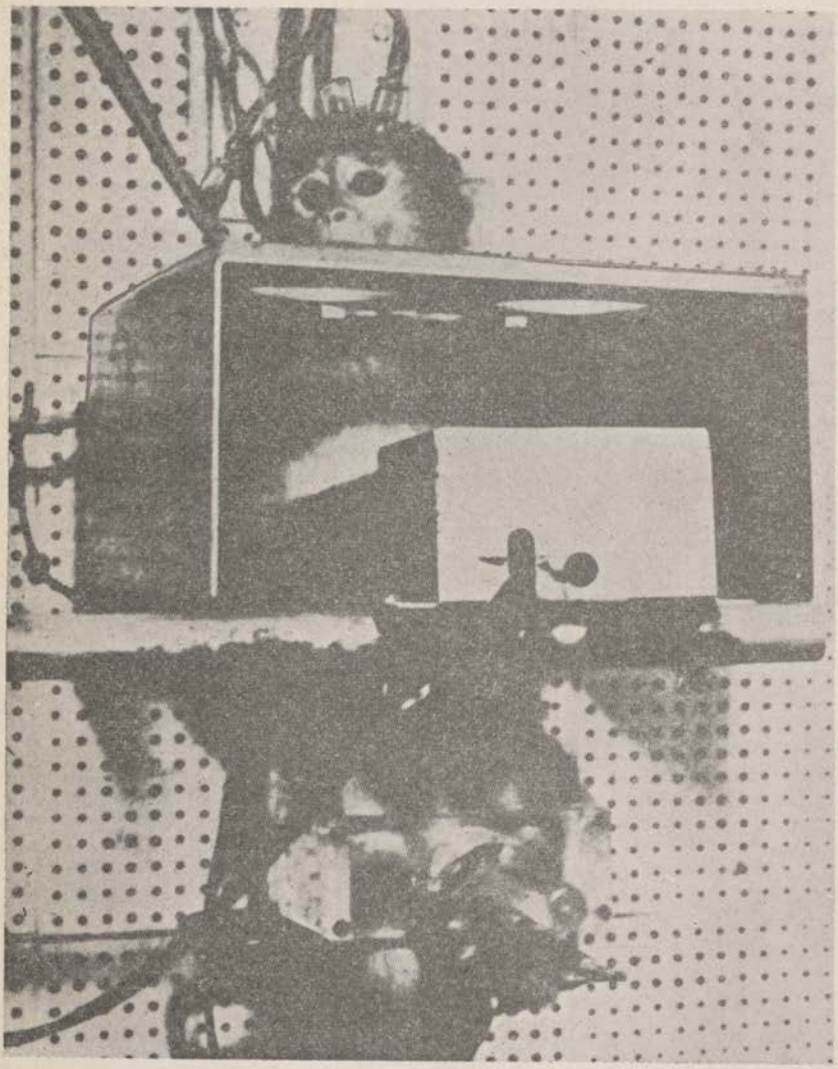


ILLUSTRATION J

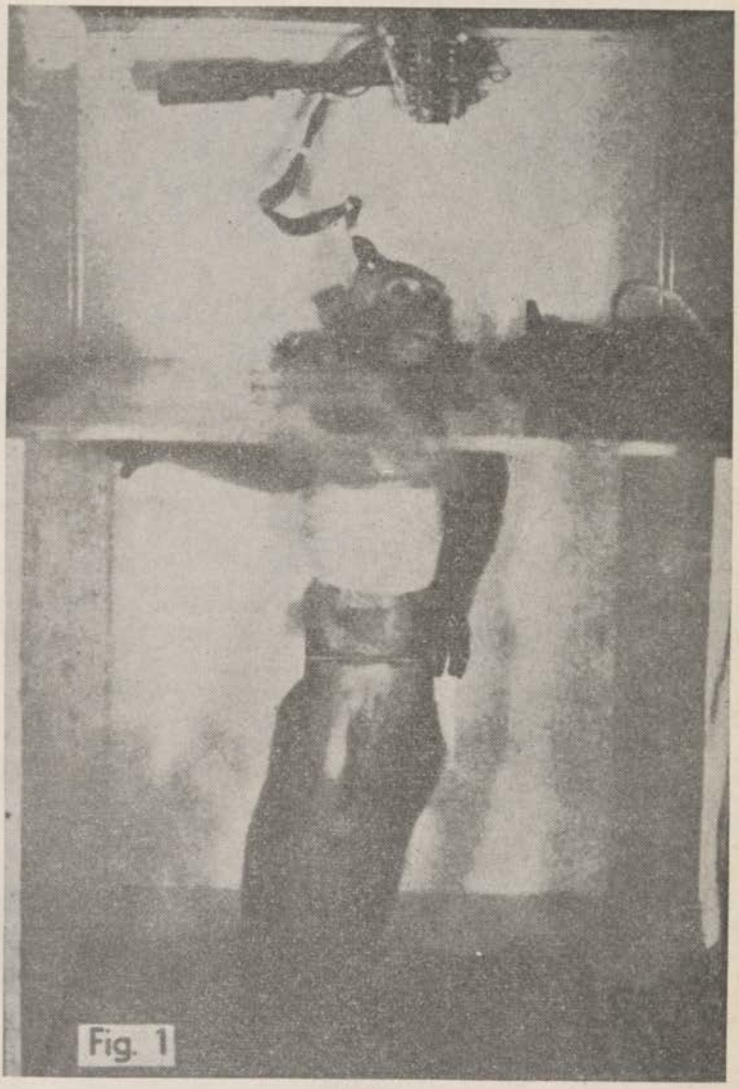


FIGURE 1

A, cabinet catch (steel, zinc plated, cat. No. 37, Stanley Hardware) ; *B*, body (wood container.

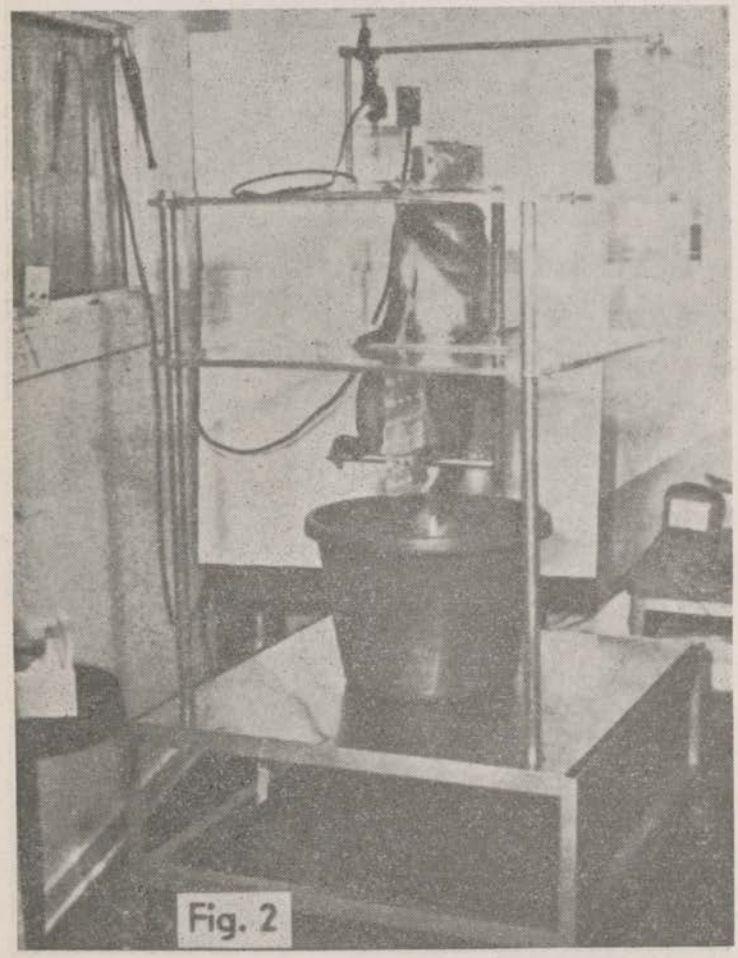


FIGURE 2

A larger model of the restraint which prevents the animal holding onto the supports.

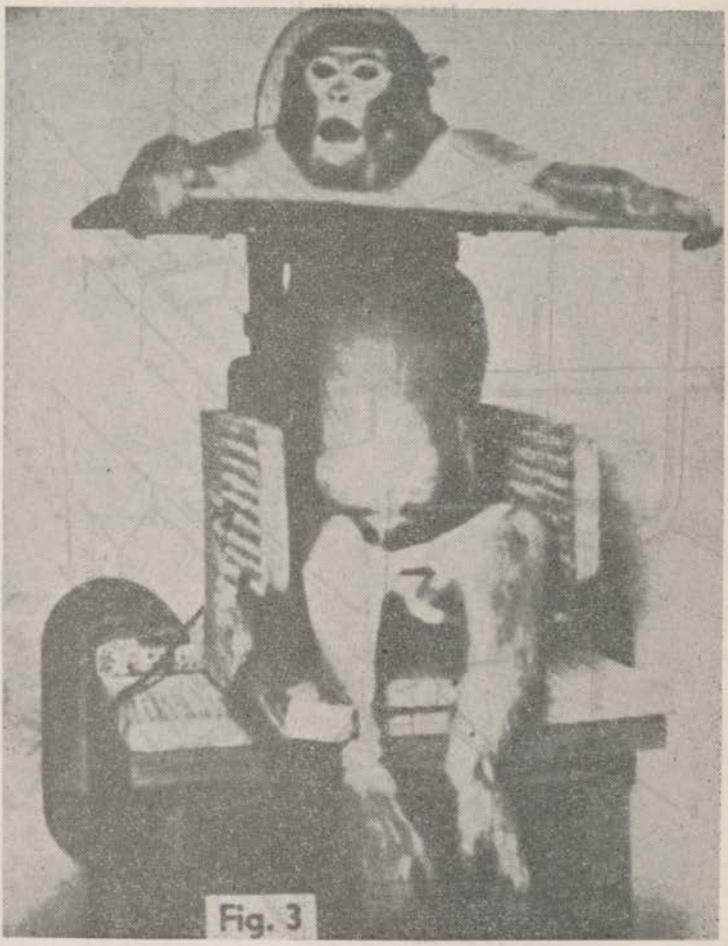


FIGURE 3

An early model of a restraint chair and table devised and used by Dr. Marlon Hines.

ILLUSTRATION K

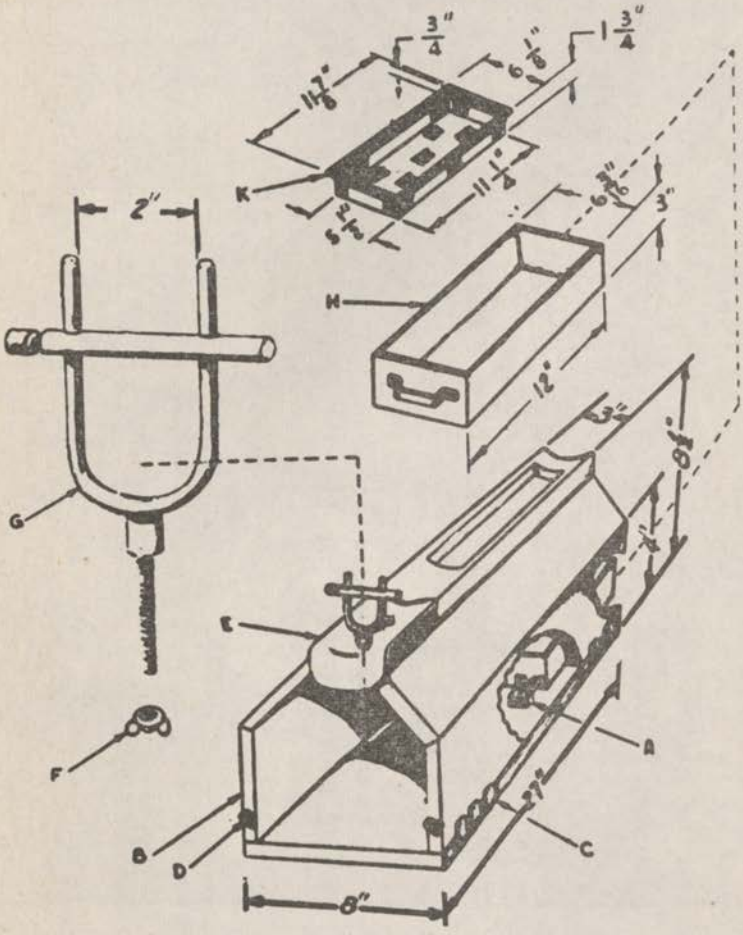


FIGURE 1

A cabinet catch (steel, zinc plated, cat. No. 37, Stanley Hardware) ; *B*, body (wood 1" nom.) ; *C*, clip (brass) ; *D*, screw eye (steel) ; *E*, plate (copper) ; *F*, wing nut (stainless steel) ; *G*, yoke and bar (stainless steel) ; *H*, drawer (plexiglass, ¼" thick) ; *K*, tray (stainless steel frame and copper screening).

Mr. ROBERTS. Mr. Robert McLane, Massachusetts Society for the Prevention of Cruelty to Animals, I believe, has stated that he will send a statement in for the record.

(The statement referred to follows:)

STATEMENT OF J. ROBERT MCLANE, DIRECTOR, PUBLIC RELATIONS DEPARTMENT, MASSACHUSETTS SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS

Mr. Chairman and members of the committee, I am J. Robert McLane, director of public relations of the Massachusetts Society for the Prevention of Cruelty to Animals, Boston, Mass.

I appear today as the representative of the above society and we appreciate this opportunity to express our views.

It is difficult to understand why even the most earnest researcher or the most ardent humane worker would not gladly support in the Congress a practical and humane bill designed to minimize the suffering of laboratory animals.

We all know that thousands of animals are used annually for medical research; and many people are constantly wondering how these animals are treated. In Massachusetts, our society is given special authority to "inspect the standards, facilities, practices, or activities in connection with the use of animals"; and our representatives make such inspections.

This society favors legislation which would minimize any animal suffering. Our interest is solely for the welfare of the animals themselves.

That we know that suffering on the part of these experimental animals occurs is evidenced in our successful prosecution of the *Franklin* case which two other speakers have already brought to your attention. Photographs taken by our society illustrating the suffering of these animals in this particular case are already in the possession of this committee and certainly speak for themselves.

We suggest that this committee consider legislation designed to alleviate any animal suffering.

Mr. ROBERTS. Mr. M. A. Farrell, director of the Pennsylvania Agricultural Experiment Station, has left a statement to be filed for the record.

(The statement of Mr. Farrell follows:)

STATEMENT OF MICHAEL A. FARRELL

Chairman Roberts and members of the committee, I appreciate the opportunity of meeting with you this morning. I am Michael A. Farrell, director of the Pennsylvania Agricultural Experiment Station. I represent the State Agricultural Experiment Stations Legislative Subcommittee of the American Association of Land Grant Colleges and State Universities.

Much of the research at the 53 agricultural experiment stations over the Nation is concerned with the nutrition of man and livestock and the prevention and control of diseases of man and other animals. Out of these researches have come numerous important contributions, such as the discovery of streptomycin and other antibiotics, and the discovery of dicoumarin used in the treatment of heart disease. Much of our knowledge concerning vitamins and hormones have resulted from research at land-grant institutions.

Many research efforts, such as those mentioned above, require animal experiments at some point in their development. It may be to determine the adequacy of vitamins in a given ration; it may be the production of tetanus and other antitoxins, or basic studies of how cattle might produce milk with a low fat content.

In such illustrative experiments as are mentioned above it is recognized that the feeding, housing, and management of research animals are important variables in the research and every effort is made to provide good quarters, an adequate diet, and proper management. Such management of animals used for research is a requirement of the research itself and it is directly associated with the provision of humane treatment of all animals.

The land-grant institutions are concerned that H.R. 1937 and H.R. 3556 would delay, and, in certain cases, stifle research requiring experimental animals, using cattle, sheep, swine, goats, as well as smaller animals. The authority granted the Commissioner in this legislation is too all-inclusive. This is undesirable where many decisions would be based on opinions and arbitrary judgments. I was glad to hear the chairman raise the question this morning of the desirability

of having an advisory council to the Commissioner. Also, there is concern about the attendant regimentation that would inevitably be established in the operation and administration of this legislation. Researchers now feel they are overburdened with paperwork. Additional regimentation may keep good scientists from making research their lifework.

May I add that workers at the land-grant institutions are concerned regarding the relation of the proposed legislation to the earlier legislation suggesting research at the State agricultural experiment stations. Congress passed the Hatch Act in 1887 as well as subsequent acts, all of which Congress consolidated into the amended Hatch Act in 1955, which directed the State stations, among other tasks, to undertake research in human and animal nutrition as well as the prevention and control of diseases in man and animals.

The land-grant institutions therefore feel this proposed legislation will be no contribution to the forward march of science and may well seriously hinder its progress.

Mr. ROBERTS. Is Miss Alice Wagner, editor of the magazine Popular Dogs here?

I happen to be a reader of yours, so I have been waiting for your statement.

STATEMENT OF MRS. ALICE WAGNER, EDITOR, POPULAR DOGS

Mrs. WAGNER. Well, Mr. Chairman, I have been editor of Popular Dogs for almost 15 years. We consider it the national purebreed dog breeders magazine of the country, more or less of a trade journal.

Mr. ROBERTS. I wish you would give a little bit more space to Kerry blue terriors in the book.

Mrs. WAGNER. The September issue does.

Since I have been editor, we have had an animal welfare section, because we believe that all of the welfare and care given to all animals reflects directly or indirectly on the purebreed dog.

Consequently, because we have written about the humane slaughter law and animal research, we have received letters from doctors and veterinarians and students—students from various universities.

I would like to read one—parts of one article—I won't read it all—from one of the students we received, and she headed it "These Things I Saw—by Margo Nesslerod."

I am a student studying veterinary medicine. I was never and am not now in the employ of any humane society or other such organization. Neither am I being paid for this article. It is a cry and plea from a young person still holding on to a few ideals I have grown up to believe in, and I am beginning to wonder if there is any real humane goodness among humans.

I am not a sentimentalist, a crusader, or a fanatic. But I cannot, under any code or way of human life, condone what I, in a few short years, have seen.

I took a year off from my education and went to work for a few months at one of Chicago's well-known and wealthy medical schools.

A Great Dane was kept in a 6-by-4-foot compartment for 8 months without release. He was a blood donor for the heart-lung machine that required blood to prime it and start it flowing.

I watched that animal stagger about semiconscious for hours, as long as 36, from time of anesthesia to awakening, because the ignorant, untrained men who cared for the animals knew nothing about anesthesia.

This dog had had distemper at one time, and was in terribly poor condition, certainly in no condition for donating blood in large quantities. He was not exercised, was not fed enough, nor properly, and was badly tormented by the caretaker boys who believed it high amusement to poke at the animal to make him lunge at the door.

I checked a stool sample and found tapeworms, roundworms, and hookworms, plus a tiny parasite called coccidia that caused eventual ulceration of the intestinal tract. I rid him of his parasites with a few capsules, and compounded his water at a cost of only a few cents.

I watched a student in his first year of medical school suture up a dog's rib cage with a ball of actually dusty dime-store twine that he took from the shelf of a cabinet. His answer to my query about the septic condition was—"what does it matter, he won't live anyhow." The dog had been used for a heart-lung experiment.

In 4 months at the school, there was not one survivor of the operation at a rate of three per week. Why? The animals used were received directly from a dealer who steals them—she explained about this later.

A collar was left on one once, and I traced the license to a man in Missouri from whom the animal had been stolen.

The animals here are not conditioned in any way preoperatively. Their state of nutrition is unbelievably poor. They are so pale from loss of blood from hookworms and from other parasites that they cannot possibly stand the shock of major surgery, much less major butchery.

This experiment is supposed to simulate human conditions. But a human in such condition is never subjected to such surgery.

The results of these procedures are completely invalid, as the conditions are terribly unfavorable. No postoperative care is given, no antibiotics.

I watched a doctor—and when I say doctor I mean Ph. D., not M.D., or D.V.M.—none of these men were actually medical doctors—I watched them take the only survivor they ever had as long as I was there and forced that weakened animal to get up and run, not walk but run, down a corridor, not 12 hours after he was operated upon.

I watched those men jam, and I mean jam and not insert, as we are taught to, a great trocar through the dog's side into his pleural cavity.

And then she talks about the wire cages, the length of the dog's nails.

Many nails grew completely around and into the grown foot. One puppy there had finally chewed his foot off to free it from the wire cage. He died 2 days later, his leg swelled like a balloon.

She goes on and tells that she heard a dealer tell the kennelman how he had acquired some of his dogs. He acquired them from different States, she said, and they were shipped for a considerable distance.

He used to lead the bitches in season down alleys at night behind the truck and snatch any male which came after them.

I am now investigating a case of a man who steals dogs.

Margo was asked to leave, withdraw from the university, after this article was published. She said the article was discussed, but the university told her it was not the reason for her being asked to withdraw. I wrote the university and received a letter back. It was on stationery without the school's letterhead—it seemed to be a carbon. They said she was asked to withdraw because her records were incomplete—but she had been at the school for a considerable time.

After that, I did not publish any students' names. I did not think it was fair to the students. I did not want any of them dismissed from school.

I would like to submit some of the letters that we received from students from veterinary schools, plus this issue with Margo's article, please.

Mr. ROBERTS. We will grant you that permission.

(The letters and article referred to follow:)

LETTER FROM THE UNIVERSITY OF CHICAGO

February 1960

Our family has always owned dogs, and they have done some nice winning at trials and shows. We have subscribed to Popular Dogs for a long time. My mother, who gets Popular Dogs, said you told her you would not publish my name, but she told you do not pay attention to unsigned letters.

I am not saying anything about the experiments on dogs and other animals, all sizes, as some of the tests might help in some way, but no one seems to care

about them, if they have water or food or any care after experiments, or if they are kept clean. When the head guys tell you they always use anesthetics, they lie. At night I keep thinking about the dogs. I wish you could come out and visit here or have one of your reporters visit. Sometimes I have to walk away, I feel so sick about the dogs. But my mother says I have to stick it out.

Trying to produce convulsions in dogs is terrible. I know they wouldn't let you see that, though. Shock experiments, removal of organs, blocking intestines, or the urine outlet so the bladder ruptures are only run of the mill these days. You'd be surprised to hear what professors and some students can think up.

No student would write to any newspaper no matter how he felt about what he saw. Even students are getting afraid to talk to each other.

LETTER FROM LOS ANGELES (PERHAPS UCLA)

November 1961

Someone brought the August issue of Popular Dogs to school for the medical students to see. Nearly everyone read it, and most of them laughed. Some said you must have been hiding behind the walls here. You should get plenty of letters from them on that, but maybe not. Our professor said for us not to answer you, or our letter would be published.

I would like to subscribe to Popular Dogs for my aunt. I will send a check at the end of the month. Do you want me to write about some things that happen here? Some of the experiments are OK, but I think you have the right idea about inspectors. I know banks are run better, because they don't know when an examiner will walk in the door. I know the animal lab would be better all around, cleaner and better care given everything that is alive if an examiner or inspector might walk in at any time. Some students will take better care of a big animal, but the smaller the animal, the less they think it feels pain. Boy, how stupid can some kids be?

My aunt shows shepherds, and I used to help her. She never knew about Popular Dogs. Now she's switching from Dog World.

LETTERS FROM MEDICAL STUDENTS—NAMES WITHHELD BY THE EDITOR

MAILED FROM PHILADELPHIA

April 1960

The article by Margo Nesselrod is an understatement if there ever was one about the housing and care of dogs. No one—but no one—ever sees the dirty cages or how dogs are kept in most labs if he or she is in charge. They leave the care and cleaning to the cleanup boys who complain that they cannot do a decent job with the stuff they have to work with, wood that is wet so much of the time it is rotting and cement that stinks so it never could be cleaned right.

MAILED FROM EAST CHICAGO, IND.

April 1960

We have subscribed to Popular Dogs for a long time and I used to show in the children's handling classes. I took Margo Nesselrod's article to school and many of the students agreed with her. I have clipped dogs' nails here, but no one ever asked me to. Right now I am starting an article for Popular Dogs on the care of dogs after major surgery. Imagine, after you have major surgery and you are between life and death (and sick as a dog—and I do not mean this as a pun), your little square of cold, drafty cement flooring is cleaned by having a hose of cold water squirted over you. The dogs are soaked by this cold water—dogs right after and recovering from surgery. No wonder most of the dogs die. But no one cares. If they live, within a couple of days or a week, they are used for a different experiment. One dog survived seven experiments.

You should get some pictures of dogs jammed in cages too small. Or dogs on cement chained to the walls, both in acute, short- and long-term experiments. I'll give you details on this.

Tell Margo I read her junior columns and expect to finish another English Setter bitch * * *

(This promised article never arrived.)

COLORADO STATE VETERINARY COLLEGE, VETERINARY COLLEGE OF COLORADO STATE UNIVERSITY

August 1960

Several students agreed that if medical schools thought an investigator might visit unexpectedly at any time, conditions would be greatly improved, not only on care of animals, housing, etc., but on the experiments. Very few accurate records are kept.

In my opinion, there would not be any need for a big army of investigators. Just a few would pull the checkrein and make the schools and all labs clean up the animal quarters. Dogs should not be so crowded that all sizes, and ages and both sexes, sick and healthy, should be caged together even for a short time. There should at least be State laws on regulating the housing and care of animals in laboratories.

UNSIGNED LETTER FROM COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS

August 1960

Are you interested in the operative mortality of animals for research? You don't have to go any further than Columbia University in little ol' New York for the answers. The long-term studies are often unique in the suffering that has to be endured. Sometimes long-term dogs are housed outside—Long Island I think. Air conditioning and renovation of the quarters make the work easier for the two-legged animals but as for the four-legged creatures, you don't know how right you are.

It would be impossible to name the many fields of research on dogs (I take it your interest is only on dogs) and we get a lot of good thoroughbred dogs here.

I do not agree that veterinarians should be the ones to investigate animal research. This would be like the bank president examining his own bank. Further, no veterinarian would publicly condemn or censor any research laboratory or fellow veterinarian. No investigator needs to be a veterinarian to see dirt and neglect and read the records any more than a bank examiner needs to understand investment banking to get the score.

You stated editorially that you would not publish names. It is not that I do not believe you but I have spent a great part of my life on my career and I have enough worries as it is without signing this. This is just my opinion. I know that many in research agree with you.

[From Popular Dogs, February 1960]

THESE THINGS I SAW

(By Margo Nesselrod)

I am a student studying veterinary medicine. I was never and am not now in the employ of any humane society or other such organization. Neither am I being paid for this article. It is a cry and a plea from a young person still holding on to a few ideals I have grown up to believe in—and I am beginning to wonder if there is any real humane goodness among humans. I am not a sentimentalist, a crusader, or fanatic, but I cannot, under any code or way of human life, condone what I, in a few short years, have seen.

I took a year off from my education (our editor, Mrs. Wagner, knew of my plans) and went to work for a few months at one of Chicago's well-known and wealthy medical schools.

A Great Dane was kept in a 6- by 4-foot compartment for 8 months without release. He was a blood donor for the heart-lung machine that required blood to prime it or start it flowing. I watched that animal stagger about semiconscious for hours—as long as 36 from time of anesthesia till awakening—because the ignorant, untrained men who care for the animals knew nothing about anesthesia and were allowed to inject nembutal intraperitoneally instead of the quick, easy intravenous method.

This dog had had distemper at one time and was in terribly poor condition, certainly in no condition for donating blood in large quantities. He was not exercised, was not fed enough nor properly, and was badly tormented by the Negro caretaker boys who believed it high amusement to poke at the animal to make him lunge at the door. I checked a stool sample microscopically and found

tapeworms, roundworms, and hookworms, plus a tiny protozoan parasite called Coccidia that causes eventual ulceration of the intestinal tract and greatly debilitate an animal. This hardly seems a logical or economical way to care for an animal. I rid him of his parasites with a few vermiplex capsules and a sulfamerizine compound in his water—at a cost of only a few cents.

I watched a student in his first year of medical school suture up a dog's rib cage with a ball of actually dusty dime-store twine that he took from the shelf of a cabinet. His answer to my query about aseptic conditions was, "What does it matter? He won't live anyhow."

The dog had been used for a heart-lung experiment in which the heart's great vessels are severed and connected to this giant apparatus that operates as a heart and lungs while the real heart is worked upon.

Money—in enormous quantities—is given by the Heart Fund, your money and mine, given to that school to help perfect the heart-lung operation so it will save lives when sufficiently developed. In 4 months at the school there was not one survivor of the operation, at a rate of three per week. Why? The animals used were received directly from a dealer who steals them (a collar was left on one once, and I traced the license to a man in Missouri from whom the dog had been stolen). The animals here are not conditioned in any way preoperatively; their state of nutrition is unbelievably poor. They are so pale from loss of blood from hookworms and other parasites that they cannot possibly stand the shock of major surgery—much less major butchery.

This experiment is supposed to simulate human conditions, but a human in such condition is never subjected to such surgery. The results of these procedures are completely invalid as the conditions are terribly unfavorable. No postoperative care is given—no antibiotics.

I watched a doctor, and when I say doctor I mean Ph. D., not M.D. or D.V.M. (none of these men were medical doctors)—I watched him take the only survivor they ever had as long as I was there and force that weakened animal to get up and run—not walk but run—down a corridor not 12 hours after he was operated upon.

I watched those men jam—and I mean jam (not insert as we are taught to)—a great trocar through the dog's side into his pleural cavity and take at one time 850cc, of fluid that had accumulated. That animal was trocared once every 24 hours (if lucky) and he just lay in pain while that fluid gathered. He was killed a few days later "to see where the fluid came from."

The cages in which these dogs are kept have wire bottoms—heavy chicken wire. Can you imagine what that does to a dog's pads? I found one dog imprisoned (for 2 days, the animal-boys said) with his long toe nails caught in that wire people knowing of it and doing nothing. A puppy there had finally chewed his foot off to free it from the wire. He died 2 days later; his leg swelled like a balloon.

These are only a few of my experiences—they occurred daily—at this institution. None of the animals were housed, fed, or handled sensibly or economically—this, out of pure ignorance and indifference. And your money is helping this to continue day by day.

When I quit this medical school, I went to work for the next 5 months for a pharmaceutical manufacturing company in the area. I had a colony of 30 dogs on which I daily had to perform experiments with tranquilizing drugs that I injected intravenously. I then observed the animals for several hours to determine the effects. On the average, about twice a week, the injected drug caused the animal to go into immediate convulsions, screaming and gasping, or becoming rigid for several hours. Any drug causing such reactions was immediately tested on several others to determine if the same effect was always achieved; then it was discarded. Some of my dogs always died, but they were constantly being replaced from the same dealer who also supplied the medical school.

I heard the dealer tell the kennel man how he acquired some of his dogs. He led a bitch in season down alleys at night behind the truck, then snatched any male which came out after her. I watched those men unload dogs from the truck—a big, smelly, foul cattle truck—and I saw them beat dogs with a metal prod for resisting a leap from the upper deck down into a wire pen on wheels, a drop of fully 5 feet.

I bought a nail clipper for $1 and once a week or so kept my dogs' nails trimmed. I discovered that out of some 200 dogs kept by that company, none but mine had their nails taken care of. In an envelope I have some of the nails

I removed from them. As their nails never touched ground—they lived their lives in small cages—their nails grew freely. About 60 percent of them had the nails grown completely around and into the foot. The animals could not walk more than a few steps. This is not necessary. This is not part of an "experiment."

This is just one detail in the complete lack of proper kennel care. Please note that I have not condemned medical experiments, except certain phases of the transquilizer job; but I am protesting violently against the ignorance, indifference, and downright cruelty with which these animals are handled. God knows how they suffer in most of this work, but why should they suffer in their cages? Because the people in charge are too indifferent to instruct the help to clip toenails once a week—even once a month.

Again I remind you that this is an eyewitness story. I shall leave you with a parting picture to think about—a picture of a basement room of the building, down where no ears can hear. There is a V-shaped board on the floor upon which is firmly tied, on her back, a fully conscious frightened bitch. She is to have compounds injected into her femoral vein (large vein on the inside of her thigh) at timed intervals, to note the effect upon her. I am not certain what the purpose was, as I was asked only to accompany the technician who was performing the injections. I was asked to "bind her mouth because her screams bothered the technician."

The technician was a girl of 20 or 21, with no college training, no training for this work at all; she had only on-the-job training. She had "an idea" where lay the femoral vessels. She knew that they lie deep in the leg, not superficially like the front leg vein (cephalic) of the dog. She also knew (after I told her) that the femoral nerve lies close to the vein and artery of the same name—a "functional triad"—and that if she missed the vein she easily could hit the nerve and cause great pain.

But the dog was in the basement so only we could hear, and I was there to suffocate the screams. Both the dog's legs were literally covered with hematomas (small blood-filled swellings marking the irritations resulting from unskilled jabbing at that vein).

The dog visibly resisted crying out—until she could no longer bear the pain. In skilled hands, those injections can be made quickly and with little discomfort to an animal. In unskilled hands, this is sadism and barbarism. It goes on for hours. Laboratory animals, especially dogs, are well conditioned to pain and do not cry out, generally, unless and until they are very badly hurt.

Maybe you—or you—can listen to a dog scream her heart out in a basement room but if you can, your morals, sensitivity and principles have rotted like the flesh of those wounds and there can be no God in your world.

Mr. ROBERTS. Thank you very much, Mrs. Wagner, for your appearance.

Is Dr. F. William Sunderman, of Jefferson Medical College here? I am informed that he had to leave. His statement will be submitted for the record.

(The statement of Dr. Sunderman follows:)

STATEMENT OF DR. F. WILLIAM SUNDERMAN

My name is F. William Sunderman. I am a physician and am director of the division of metabolic research and clinical professor of medicine at Jefferson Medical College, Philadelphia. I am appearing before your committee in behalf of the Pennsylvania Medical Society as chairman of the commission on medical research.

The position of the Pennsylvania Medical Society in opposing the Griffiths and Moulder bills has been expressed in my recent editorial published in the Pennsylvania Medical Journal. Two of my similar editorials were published in the Bulletin of the College of American Pathologists and in Philadelphia Medicine. May I kindly request permission to have these editorials made a part of my official testimony?

We are convinced that enactment of the type of legislation proposed by the Griffiths and Moulder bills would seriously impede the progress of scientific medicine in this country and, in addition, would impose a severe handicap on clinical investigators and physicians responsible for the diagnosis of disease. Throughout my scientific career I have been intimately concerned with the

clinical investigation and application of diagnostic procedures for the care and treatment of the sick and the injured. I can scarcely believe that the proponents of these bills have any conception of the effects, the restraints, and the increased costs that could be imposed as a result of these bills.

Laboratory animals are essential for the diagnosis and treatment of many diseases. They are necessary for the bioassay of hormones in various glandular conditions; in the detection, diagnosis, and isolation of various viral and fungal diseases, as well as in the refined diagnosis of tuberculosis and other infections. Laboratory animals are essential for the preparation of certain vaccines and antiserums and for refinements in the diagnosis of syphilis. Even some of the tests for pregnancy could conceivably come under restrictive surveillance with this type of legislation.

Enactment of these two bills in our opinion would load our research and diagnostic laboratories with harassing redtape and burdensome paperwork that would necessitate an appreciable increase in laboratory personnel. It would probably require a large staff of Federal inspectors to investigate that portion of the more than 8,000 hospitals and diagnostic laboratories that are affected. In our opinion, this is totally unnecessary. Furthermore, this legislation would almost certainly delay the acquisition of diagnostic information on patients involved in clinical research.

Many of the directors of hospital and clinical laboratories in this country are members of the American Society of Clinical Pathologists and the Association of Clinical Scientists. As a past president of both of these organizations, I am certain that most of my colleagues would concur in our position to this legislation and would deplore the increase in the cost of medical care and research that might ensue as a consequence.

Medical science has been aided substantially in recent years by governmental support. However, the ultimate benefits from governmental support depend in large measure upon the avoidance of bureaucratic pressures and upon the safeguarding of freedom in scientific pursuits.

If anyone has any questions, I shall be pleased to attempt to answer them.

Mr. ROBERTS. Dr. Robert A. Moore, president, Downstate Medical Center, State University of New York, Brooklyn, N.Y.,

STATEMENT OF DR. ROBERT A. MOORE, PRESIDENT, DOWNSTATE MEDICAL CENTER, STATE UNIVERSITY OF NEW YORK, BROOKLYN, N.Y.

Dr. MOORE. Mr. Chairman, I think most of the points that I had hoped to make in discussing these two bills with you have been made.

I will save your time, with your permission, by asking if I may place my statement in the record, which I have here, together with a "Principles of Laboratory Animal Care," which is a publication of the National Society for Medical Research, in which we ask each laboratory that has animals to place this in a conspicuous place.

If I may, at the same time, Mr. Chairman, I would request your permission to introduce into the record the statements which I have here, from Dr. I. S. Radvin, professor of surgery and vice president of the University of Pennsylvania.

Finally, I would ask your permission to introduce into the record the statement which I do not have, but which will be sent to the clerk of the committee, from Dr. Stanley Bennett, the dean of the College of Medicine of the University of Chicago, who had hoped to appear, but cannot be here, representing the Association of American Medical Colleges.

Mr. ROBERTS. Thank you, Dr. Moore. Your statement and the statements you have appended to your statement—the statement of Dr. Radvin, who of course is well known to this committee—will be placed in the record.

Dr. MOORE. Thank you very much, sir.
(The statements referred to follow:)

STATEMENT OF DR. ROBERT A. MOORE

Mr. Chairman, I am Dr. Robert A. Moore of Brooklyn, N.Y. I appear before you in my capacity as a member of the board of directors of the National Society for Medical Research and as chairman of the committee of that board on Federal legislation. In Brooklyn, I am president and dean of the Downstate Medical Center, State University of New York.

The National Society for Medical Research was organized in 1946 by Dr. Anton J. Carlson, one of America's most distinguished physiologists and medical educators. The current president is Dr. Hiram Essex, a retired member of the Mayo Clinic and Foundation in Rochester, Minn. The society has both material and moral support from most of the national and many of the regional and local scientific societies of the Nation. The objective of the society is to keep the public informed on the needs of biological and medical education and research, particularly in relation to the use of animals in teaching and research.

I am grateful to you, Mr. Roberts, and to the members of the subcommittee for the opportunity to present to you the views of the scientific community of the country on the legislation under consideration.

At the outset let me emphasize that we who are or have been engaged in scientific research are not in opposition to the stated objectives of H.R. 1937 and 3556 as given in the preamble—that experimental animals shall be spared avoidable pain, stress, discomfort, and fear, shall be used only when no alternative procedure is available, shall be used in smallest numbers possible, and shall be comfortably housed, well fed, and humanely treated. No scientist worthy of the name would violate any of these objectives because he knows that the results of his experiments would be questionable if he did. There may be some differences of opinion ourselves and the proponents of these bills on what constitute adequate housing, good feeding, and humane treatment.

To emphasize this point may I call your attention to a statement on the "Principles of Laboratory Animal Care" prepared by the society in collaboration with many scientific societies. I shall not take your time, Mr. Chairman, to read this but request your permission to place it in the record, where all may see that we, as others, stand for proper and humane care of experimental animals.

On the other hand, let me emphasize equally strongly that we do not accept there is gross mistreatment of animals in the scientific laboratories of this country. We will not and cannot deny that in a few places there is carelessness or thoughtlessness in these matters. This brings me to the first point I wish to make—that the proposed legislation will not have the desired effect.

Both H.R. 1937 and H.R. 3556 interdict the granting of funds by the Federal Government or the use of funds in the Federal establishment unless the institution has been licensed and the programs of the individual scientists approved. I submit, gentlemen, that it is the institutions of the Government and of those receiving Federal grants which have the best animal care and follow the best humane techniques. This legislation would penalize the good to catch the bad, except the bad would not get caught.

The second point I wish to make concerns the licensing of individual experiments. I cite from item (g) of section 4 of H.R. 1937—"No experiment or test on living animals shall be undertaken or performed unless a project plan is on file in such form as the Secretary may prescribe, describing the nature and purposes of the project and the procedures to be employed with respect to living animals." This requirement assumes that an investigator can outline in advance exactly what he is going to do and how he is going to do it. This is rarely the case. At least in the early stages of most research there is a period of trial and error, until the best procedure is developed. Under both bills as now written there could be interminable delays while a new plan is being filed.

A subsidiary second point concerns when the scientist could proceed with his or her studies. Section 9 of H.R. 3556 provides that: "No use of animals shall be undertaken by any holder of a certificate of compliance with this act until a project plan has been filed with the Agency of Laboratory Animal Control in such form as the Commissioner shall prescribe—and the project plan has been approved by the Commissioner." This would make for further delay and I

submit, gentlemen, it is entirely possible a person holding a 1-year grant would never get his experiment done because of several necessary changes, each serially filed and individually approved.

A third point I wish to make concerns the realism of some items in the bills. In paragraph (f) of section 12 of H.R. 3556 it states "anesthetics shall be administered only by a licensed veterinarian or a doctor of medicine qualified in anesthesiology, except that a student in a graduate medical school may do so for purposes of training when in the presence and under the immediate supervision o fa licensed veterinarian or doctor of medicine." This paragraph, if enforced, would eliminate a significant part of all animal experimentation for the simple reason there are not enough veterinarians or doctors of medicine qualified in anesthesiology to go around. In fact, there are not enough doctors of medicine qualified in anesthesiology to administer anesthetics to human beings. A large share of anesthetics in hospitals today are given by nurse anesthetists.

A fourth point I wish to make relates to the provisions concerning work by students. Both acts provide that students in a laboratory holding a certificate may, under supervision, conduct experiments or tests, but both acts go on to make these experiments or tests of no value because it is prescribed in H.R. 3556 and 1937 in identical language, "* * * all animals used by students in practice or other painful procedures shall be under complete anesthesia and shall be killed without being allowed to recover consciousness." Performance of the actual surgical procedure is only a small part of curing or correcting a surgical condition. Immediate postoperative care and dressing of the wounds will equally or more influence outcome. These bills would specify: you may practice operations on animals, but you must learn all other aspects of surgical care on human beings.

There are many other items in these bills which I might discuss in this same manner, but I believe these four points indicate that enactment of this type of legislation would seriously impede scientific research in many fields—medicine, dentistry, veterinary medicine, and biology, to name a few. And, it would do it at a time when the declared policy of the Congress is to foster this type of research. I need only point to the increasing appropriations for research and for research facilities. The House of Representatives has recently enacted legislation on adequate testing of drugs in animals before they are used in man. I believe H.R. 1937 and H.R. 3556 would make it difficult to carry through in a program of testing of drugs.

May I conclude my remarks, Mr. Chairman and gentlemen, by calling your attention to what scientists have done and are doing to improve the care of experimental animals. I wish to emphasize these steps antedate the first introduction of bills of this type in the Congress in 1960. In other words, our program is not one of defense, but one in which we believe and wish to carry through. The program of the National Society for Medical Research is based on areas, all of which are now authorized with the Public Health Service Act. I shall only mention these as there are others here today who are prepared to give you fuller information and I am aware of the need for brevity.

First, more trained personnel at both the professional and technical levels, that is more veterinarians and more animal care technicians. Training centers have been established. The American Veterinary Medical Association has a program for certification of competence in this field.

Second, greater attention to planning of animal quarters and more research on the proper and adequate care of experimental animals and adequate dissemination of this knowledge. Both of these objectives have the attention of the National Research Council, the National Institutes of Health, the Animal Care Panel, and various scientific agencies.

Third, construction of more and better animal quarters in health schools and hospitals. It was my privilege to serve for 4 years on the National Advisory Council for Health Research Facilities of the U.S. Public Health Service, and I can assure many grants were made for this purpose and to a good end.

Once again, Mr. Chairman, may I thank you for the privilege of appearing before you.

TESTIMONY BY DR. I. S. RAVDIN, PROFESSOR OF SURGERY AND VICE PRESIDENT FOR MEDICAL AFFAIRS, UNIVERSITY OF PENNSYLVANIA

The research workers in this country are fully aware of the need for healthy, happy animals to obtain meaningful results in experiments. Therefore, these workers make every effort to see that the animals are maintained under the best possible conditions. Improvement in animal care is a point of major concern in the minds of most investigators. These individuals are the first to seize and act upon any new development which may improve the welfare of the laboratory animal.

Any license requirement for the use of animals would in my opinion seriously impair the efforts of the investigator and teacher, and would stymie the remarkable progress we have made in this country in the development of skilled scientists and excellent practicing physicians. I did research at the University of Edinburgh in 1927 and worked under the licensing plan. Licensing requirements would add to the administrative burden of the investigator and might well reduce his research output. This, in turn, would decrease the rate of advancement of our knowledge of a wide variety of pathological processes and their control.

On occasion the British laboratory animal control bill is used to illustrate means of control. This legislation, initiated in 1876, is so loosely written latitude of infinite variety is possible. Over the years British scientists, men of conscience and scientific sincerty, have developed means of laboratory animal control which work well—less because of legislation than through meeting scientific necessities in spite of it. Their control techniques and legislation are not good products for export.

The research laboratories of this country concerned with a better understanding of normal physiological processes, and the abnormalities imposed by disease, have played an important role in the improvement of the health of our people. In no country in the world does one find a higher type of medical practice than we now have.

Many Americans and an untold number of nationals of other countries have benefited from this research. The scientists concerned with this effort are careful, understanding men and women. They know the importance of using animals from well-cared-for sources. They have dedicated themselves to search for the truth. They are cautious individuals. It is because of their achievements that the people of this country are so well cared for. In 1900 the first three causes of death were tuberculosis, pneumonia, and the infantile diarrheas. Today not a single one of these is among the first 10 causes of death. The cardiovascular diseases are first and cancer is second. A restrictive bill will definitely slow research and retard clearer understanding of a wide variety of disease processes. As a surgeon who has lived to see the present approach to many cardivascular disorders I know whereof I speak.

The answer to cancer will come from a deeper understanding of the biological processes involved in these disorders—not from operations which approach subtotal eviscerations by the surgeon's scalpel.

I wonder if the distinguished members of this committee really wish to harness biological and physiological research and turn back the clock to the days of medical empiricism?

In my opinion the bill as drawn will impose rather extensive regulations upon the use of live vertebrate animals for scientific experiments. The effect would undoubtedly be harmful. A distinguished jurist, the dean of one of our great schools of law, has said, "I think we should be particularly sensitive about congressional conditions attached to grants for education and research. There ought to be great restraint on the part of Congress in these matters in the interest of genuine independence on the part of people engaged in education and research." I find myself in agreement with this statement, for we might well find that what had been accomplished was to produce in medical science a desert without oases.

Mr. ROBERTS. Dr. Henry T. Bahnson, Johns Hopkins Medical School.

He is not here.

Dr. Helen B. Taussig, professor of pediatrics, Johns Hopkins Hospital, Baltimore, Md.

STATEMENT OF DR. HELEN B. TAUSSIG, PROFESSOR OF PEDIATRICS, JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.

Dr. TAUSSIG. Gentlemen, I come to you today as vice president of the American Heart Association, as well as professor of pediatrics at Johns Hopkins Medical School; also as a physician who has devoted her life to the diagnosis and treatment of heart disease in children, and as a doctor who first conceived of the operation to help blue babies. Therefore, I am naturally deeply cncerned with the laws which affect investigative work.

The Moulder and Griffith bills are recommended in order to obtain humane treatment of animals. We are all in accord with that. It is the question of its effect on investigative work, with which I am concerned.

Both bills demand that no animal experiments be undertaken unless it can be proved that it cannot be done on invertebrate animals. If it were taken literally, it would be pretty impossible, and hold up a great deal of investigation. If it is not taken literally, it does not seem necessary.

The Moulder bill definitely states that animal experiments should be kept to a minimum, and furthermore that bill states that the person who is to be the head of the Bureau be a lawyer with no experience in laboratory work. In other words, the person who processes the requests for laboratory and experimental investigation, the man who ultimately judges the importance of these experiments, and the ability of the investigator, is not experienced in the field in which he is judging.

Both bills demand that the entire problem be outlined, including the procedures used on animals. It is not quite clear whether changes in procedures require a new application or not. But the content indicates—that if you radically change the procedure, you have to file another application.

May I review for a moment what Dr. Blalock did in developing the blue baby operation. He wished to find out whether one could help a baby who is suffering from lack of oxygen. He could not find an animal that had the condition. He had to try and simulate it. He wanted to try and see whether my suggestion was good and whether it would help before he undertook it on children. He tried to create pulmonary stenosis and found it was impossible. He would have had to file an application for that.

Then we had to radically change the whole line of attack and consequently change the procedure and try to alter the circulation so that the dog would be receiving a large amount of venous blood instead of pure arterial blood in the body. Even that didn't work.

We had to go on to take out a lobe of the lung, and decrease the area of circulation in the lungs. Many people would say that was a radical change in procedure. We would have had to file still another application.

The penalties in this bill for not conforming to that, and for extending the idea that this is not in line with the original one, are so great that I think that none of us wanted to take a chance. All doctors wish to keep entirely within the law. That would mean two or three applications would be necessary to get one total experiment done.

It would cost money on our part to file it. It would cost money on the Government's part to review all the applications. It would be a tremendous waste of time and energy on the part of both parties, and it would deaden initiative.

Actually as we made suggestions from day to day, Dr. Blalach immediately changed his tactics. Ultimately he was able to prove that there was good reason to believe that increasing the circulation to the lungs would help these children, and he had also developed sufficient technique and perfected it until he felt that it was a safe operation.

Basically, those conditions must be fulfilled before you undertake a new operation.

It was undertaken with an extraordinarily low mortality rate, and it has helped many people, and it has opened up the whole field of cardiovascular surgery.

Dr. Henry Bahnson is filing a statement with you concerning the use of animals in cardiac surgery. But let me point out today what does not seem to be well understood; that is, the importance of letting an animal live after you have done the experiment. There are many late and untoward complications that we want to avoid, and you have got not only to see whether the surgery is technically possible, but that it functions well afterward, that there are no complications, that it goes all right.

We must be on the alert for unexpected complications, and for knowing that you are doing long-term good, not merely surviving the operation.

There is another aspect that I think this bill would seriously affect, and that is the Kefauver drug bill and the similar bill which you passed in the House yesterday.

I am sure that you are all well aware of the major stimulus to the passage of the drug bill which thalidomide and its effect on the unborn child had.

Everyone in the country has been rightfully demanding that drugs be tested on animals before they are used in man, and testing the safety of drugs on unborn children requires a lot of research on a large number and variety of different types of animals. Indeed, some people have thought that it was too difficult a problem, and too vast a problem to be able to cope with.

I still maintain in the day and age when we can put man into outer space, and seriously contemplate a trip to the moon, that it is fair to say that what man thinks is really important he can get done.

Is there anything more important than the health and strength of our future generations?

We must test drugs, we must be certain that they are not only safe and effective, but that there are not long-term complications and late dangers.

We cannot demand safety of drugs and decry unnecessary experiment made on man, and at the same time tie the physician's and investigator's hands and hinder their work which necessitates the extensive use of animals. This is not a question of the minimum number of animals, but to have a sufficient number of animals tested to assure safety.

Let me in closing assure you that we are primarily interested in the relief of human suffering, and are not indifferent at all to animal

suffering. We certainly wish to do everything we can to prevent animals suffering.

We admit that accidents and abuses occur in every field of human endeavor. But I would still feel that it would be wiser for the Federal Government to encourage grants to improve the conditions under which animals are housed than to deprive our citizens and our future generations of the advances in knowledge which can come speedily from animal experimentation, freely undertaken by capable people.

Now, I know that is qualifying, "freely undertaken by capable people," but experiments cost money, and obtaining Federal funds is not easy. We have to outline our experiments, we have to show that this is good. The process of obtaining funds can act as a control, both for misuse of funds, and I think it could well act as a control against the misuse of animals.

Thank you, sir.

(Dr. Taussig's prepared statement is as follows:)

STATEMENT OF DR. HELEN B. TAUSSIG, PROFESSOR OF PEDIATRICS, JOHNS HOPKINS HOSPITAL

Mr. Chairman, as a vice president of the American Heart Association and as a professor of pediatrics at the Johns Hopkins Medical School, and also as a physician who has devoted her life to the diagnosis and treatment of heart disease in children, and as the doctor who first conceived the operation to help blue babies, I am naturally deeply concerned with the laws which affected investigative work.

The Moulder and Griffiths bills (H.R. 3556 and H.R. 1937) are recommended in order to obtain humane treatment of animals. That we do not oppose, but I do believe that both bills limit medical investigation. Both bills demand that no animal experiments be undertaken unless proved that it cannot be done on invertebrate animals. If literally followed it would delay a lot of work. If not, why mention it. Thereafter, experiments on animals shall be kept to a minimum. Furthermore, the Moulder bill requires that the person who is at the head of the new bureau be a "lawyer, who is not and never has been connected with a laboratory." In other words a person with no experience in laboratory investigation is the man who ultimately judges the importance of an experiment and the ability of the investigator.

Both bills demand that prior to any experimental work, the entire problem is outlined step by step "including the procedures to be employed with respect to living animals." Just what does that mean? The penalty for failure to comply is very severe and doctors certainly wish to keep within the law. If every step can be outlined, the experiment is often not necessary. Let me for a moment review what would have happened in 1942–44 had this law been in effect.

I suggested to Dr. Alfred Blalock that increasing the circulation to the lungs would help many cyanotic children who suffer from lack of oxygen. He wanted to prove the principle was true, but the condition did not exist in animals. First he tried to create a pulmonary stenosis. That did not work. Then he changed the circulation and directed some blood which was meant to go to the lungs to the body, a very different procedure from what he had originally planned. But that experiment did not make the animal suffer (which incidentally is prohibited in these bills) . The condition was not similar to what children suffered. Finally, he removed part of one lung in addition to altering the circulation. That was a totally different procedure from what he had originally planned. It would have required a new application. Applications take time and cost money and it costs the Government money to review the application. It does impede medical progress.

Nevertheless, and rightly so, until Dr. Blalock was convinced that the idea was sound and the technique was good, he would not operate on children. The remarkable success of the operation and his initial low mortality rate from the operation show how right he was. The operation has saved thousands of lives throughout the world. It opened up the field of cardiac surgery.

Dr. Henry Bahnson is filing his report of the vital need for animal experimentation in cardiac surgery. Suffice it here for me to say that animal experimentation

is essential for the development and improvement of cardiac surgery. It is also essential to let the animals survive. It is not merely important that the operation can be done; it is most important to determine the ultimate success of the operation and whether or not there are any late complications.

There is another important bill which would be seriously affected by this legislation; namely, the Kefauver drug bill. This House has passed a similar bill yesterday.

I am sure all of you are by now aware of the fact that the major stimulus to the passage of this bill was thalidomide and its devastating effects on the unborn child. Almost everyone in this country has rightly demanded that drugs are tested on animals before they are tested on man. Testing the safety of drugs for unborn children will require a lot or difficult research on a large number of various types of animals. Indeed, the work has been criticized as too difficult and too expensive to be possible. Nevertheless, in the day and age when we put man into outer space and seriously plan a trip to the moon, it is fair to say that what man really thinks is important, can be done. Careful testing of drugs could be done with a small fraction of the cost of putting a man in outer space. Is there anything more important than the health and strength of our future generations? We must test drugs and be as certain as we can, not only that they are safe and effective, but also that they do not cause untoward and dangerous complications, and do not hurt the unborn child. We cannot demand safety of drugs and decry unnecessary experiments on man, and at the same time tie the hands of physicians and thereby prevent the necessary extensive animal studies. The problem here is not the minimum number of experiments that are necessary but to have a sufficiently large number of experiments done to establish the reasonable safety of the drug.

Let me assure you that persons whose primary interest is in the relief of human suffering are not indifferent to animal suffering. The apparatus which has just been shown for crushing the limb of an animal and then allowing the animal to regain consciousness and linger on until he died 2 days to a week later was an experiment designed by Dr. Blalock at the request of English doctors during the war, because just such things were happening to human beings. In heavily bombed England, people who survived bombings and had had a limb crushed beneath falling buildings were dying 2 days to a week later as a result of the injury. Our British Allies asked Dr. Blalock if he could determine why they died and what doctors should do to prevent it. The experiment was done to save human lives. The experiments were nasty, but war is a nasty business. We study radiation on animals to protect man. We study crush injuries to help man live.

It is, however, only fair to admit that accidents and abuses occur in every field of human endeavor. For that reason every State does and should have laws regulating the use of animals for experimental purposes.

It would seem far wiser for the Federal Government to encourage grants to improve the conditions under which animals are housed than to deprive our present citizens and our future generations of the advances in knowledge which can most speedily come from animal experimentation, freely undertaken by capable people. Such experiments are expensive. Federal funds are not easy to obtain. The process of obtaining funds for these experiments acts as a control against the misuse of funds and could well act as control against abuse of animals.

Thank you for the opportunity to testify.

Mr. ROBERTS. The last part of your statement, Doctor, prompts this question.

Knowing, as this subcommittee does, about the use of Federal funds—I am sure you know we have control and authorization of funds under Hill-Burton, and institutional grants of various kinds, project grants—would you object to some type of Federal legislation that would provide a minimum of adequate room and care and feeding and control of these research animals?

Dr. TAUSSIG. A minimum, certainly not. I think we are all interested in humane care of animals. But I do think that in judging what an experiment is worth, it should be judged by a person who has had experience in the field, and who knows something of the problems.

And control must be designed so as not to impede experimental work and medical science, and the advances that you want.

I mean there are many things that seem so bad. Crushed limbs seem terrible. But the war was terrible, too. And the people who died of that syndrome were a very real problem during the war. Radiation and fallout come in, and they are very real problems today. There are many things that we have got to study that are not happy or good for the animals. But they are certainly very bad for man.

Mr. ROBERTS. You think that there might be some consideration given to the repetition of experiments in animals—I mean if you are doing research in one section of the institution, that can be carried over to another part of the institution—do you think there might be some way in which, through a reporting system, or some other type of system, exchange of information could be had, where we could minimize some of these experiments without endangering research?

Dr. TAUSSIG. That is really very difficult. Particularly when you think of thalidomide—how hard it is to reproduce this in animals. Some company would say, "Yes, we have done that, and there is no harm," and the next one would say, "Yes, we have done it slightly differently, have different results." Results should be checked.

When I was over in Portugal, they told me 8 months after the date of the publicity, thalidomide was probably the cause of this condition, the condition dropped to almost zero. It showed it was a very potent cause indeed.

Mr. ROBERTS. Thank you very much.

Are there any other witnesses who cannot attend the meeting tomorrow?

Mrs. Twyne, will you come around?

STATEMENT OF MRS. PAUL M. TWYNE, PRESIDENT OF THE VIRGINIA FEDERATION OF HUMANE SOCIETIES

Mrs. TWYNE. I am Mrs. Paul M. Twyne, president of the Virginia Federation of Humane Societies. I am also an alternate on the Animal Allocation Board for the Government of the District of Columbia. The function of this Board is to advise the Commissioners in making policy determinations regarding the use of impounded animals for medical research and instruction, and to assist the Director, Department of Public Health, in developing standards and criteria for licensing institutions, and to assist the Director, Department of Public Health, in developing standards and criteria for licensing institutions that desire to obtain such animals.

That became effective when the pound seizure law was approved by the Commissioners of the District of Columbia—that an Allocation Board would decide the standards and work with the various officials. And it has helped some, I think, in the District.

It is one of the controls that one of the doctors mentioned earlier.

I appreciate the opportunity to appear before your committee and ask for your approval of bills H.R. 1937 and H.R. 3556—the humane treatment of laboratory animals.

One result of the accelerated growth in medical research has been the development of a huge industry throughout the Nation in the procuring of animals and selling them to the laboratories. There are two

groups involved in this business—the suppliers or procurers, and the dealers that sell direct to the laboratories under contract. The dealers buy from auctions, get them from public pounds, and from suppliers. The suppliers get animals wherever they can. And many pets disappear in their communities and are never found.

As an officer of the Virginia federation, I have investigated the conditions under which some of the known suppliers and dealers keep their animals until their final disposition. Suppliers as a rule want to get rid of their animals quickly. They make no provision for their protection from the elements, or for food and water. The animals receive no medical care. They are kept in indescribable filth and misery.

The suppliers usually take their animals to other States for disposition and drive late at night to make their deliveries. The names of most of the suppliers in this area are not known. The dealers usually make delivery about twice a week. They have makeshift receive no medical care. They are kept in indescribable filth and too small.

The animals are fed on top of accumulated filth and must fight the other animals in the cage for their share of the food; when they are loaded for delivery to the research institutions, they are tightly packed in cages built into the trucks.

In spite of the pound seizure laws forced on the people in many communities, the stolen animals, and the thousands of animals obtained legally for medical use, the research institutions cry that they cannot obtain enough animals. The American Medical Veterinarian Journal reported in a summer issue in 1961 that in the National Capital area alone more than 8 million animals give their lives annually in research. One laboratory spokesman predicted that by the year 2000 the procurement of experiment animals would be an industry equal in magnitude to the livestock industry.

Multiply the 8 million animals in the Washington area by the number of urban areas throughout the United States, and it staggers the imagination to visualize the number of animals sacrificed each year throughout the Nation.

As a member of the Animal Allocation Board and as an officer of the Virginia Federation, I have visited several research institutions in this area. I have found dogs in cages that were too small where the dogs could not lie straight out, or stand in the cages. I have seen sick dogs soaking wet, lying on the floors of wet cages in dark, damp basements of laboratories where the attendant had hosed the quarters with the dogs being left in the cages.

Some of the cruelty inflicted on animals in research is caused by thoughtlessness such as in one institution in this area, where the experimenters went out to lunch and left a dog lying on its back fastened by each leg to a corner of the table. When they returned they continued to work on the animal without releasing it for a moment of rest. A report was made to the Animal Allocation Board by the president of the Washington Humane Society of a letter to one institution concerning information that the institution was throwing animals not yet dead into an incinerator. The director promised it would not happen again.

In most institutions, if animals under experimentation die, seldom is a post mortem conducted to determine why it died, whether it resulted from the experiment. The whole thing is thrown out, and the experiment started again. This is wasteful and causes unnecessary suffering to the experimental animal. I was refused permission to visit the kennels of another laboratory. While talking to the doctor in charge, I asked him if sedation was used to ease the suffering of animals in prolonged painful experiments. He raised his eyebrows and said, "Suffering—science has not proved yet that animals suffer. To think they suffer is anthropomorphism. We believe that any reflex or reaction is instinct and is not induced by a sensation of pain."

One of the employees of that institution resigned because he could not bear to hear the animals cry. The employee did not think it was wrong as it was a research laboratory and the animals had to suffer.

This same doctor and some of the dealers are members of the animal care panel which is supposed to develop standards for the care of laboratory animals. It may be noted in the standards they have proposed that nothing is said as to the elimination of painful unnecessary repetitious experiments.

This staggering expenditure of life and suffering goes on without a single governmental check or control. Moreover it is costly. Because of the easy availability of money for research purposes, researchers go on piling up vast statistical totals far past the point where this could affect the results. Under the laissez-faire system which now prevails in medical research there is no check whatever upon the wasteful repetition of experiments for which the taxpayer pays; no check on careless planning, no check on the outright sadist, who surrounds his real subconscious motive with a fog of scientific terms.

Millions of dollars are appropriated by the Congress each year for medical and related research purposes. Millions are contributed from private sources for the same purpose, and yet there is no central authority or clearinghouse over animal experimentation.

There is no authority to say to an ambitious experimenter that certain extremely painful tests must be carefully scrutinized to determine whether the research is important enough to inflict such pain on a living creature.

By making millions of dollars available for medical research with no strings attached except the imagination of the researcher, the taxpayers are subsidizing scientific boondoggling and repetitious waste.

In view of the foregoing, I respectfully urge your favorable report on bills H.R. 1937 and H.R. 3356.

Mr. ROBERTS. Thank you very much for your appearance and statement.

(The following document was submitted for the record:)

VIRGINIA FEDERATION OF HUMANE SOCIETIES, INC.,
COMMITTEE ON LABORATORY ANIMALS,
Arlington, Va., September 11, 1961.

CONSCIENCE AND THE LABORATORIES

Within the past decade medical research has mushroomed into a giant industry which demands the sacrifice of several hundred million animals a year.

Three times as many dogs are used for training surgeons as were used 5 years ago. Ten times as many dogs, cats, and other animals are used for testing food additives, cosmetics, insecticides, and so on, as were used in 1956.

In the National Capital area alone, comprising Washington, northern Virginia, and nearby Maryland, 8 million animals give their lives annually in research. One laboratory spokesman predicted that by the year 2000 the procurement of experimental animals would be an industry equal in magnitude to the livestock industry.

This staggering expenditure of life and suffering goes on without a single governmental check or control. Moreover it is costly. The medical research industry receives a major part of its support from Federal funds.

Outside of the laboratories, big business in general must submit to some control of law. The stock market, the common carriers, the food and drug industry and the broadcasting industry, among others, have all been made subject to regulation in the public interest. The laboratories today need regulation in the name of conscience, decency and humanity.

INDIFFERENCE, CALLOUSNESS, FILTH, NEGLECT

Dogs and cats are confined year in and year out in cages so small that the larger dogs are unable either to stretch out or to stand up. Monkeys have been photographed chained by an 18-inch chain to a wall. Resting boards are rarely provided; the animal has to sleep on the wire mesh flooring of its cage. Sometimes its feet are cut and bleeding from walking on the wire; sometimes the wire mesh is so coarse that the animal cannot stand at all, but must spend its entire life lying down.

Some medical research institutions have taken every effort to keep their animals in healthy and comfortable condition. A large proportion have failed signally; hence the lives of countless animals are wasted through gross negligence. Emaciation is common, vermin are common, in the animal quarters of supposedly great medical schools. Dogs go to the operating board in a state of debilitation from hookworms and other parasites. The lives of countless animals are wasted through negligence, despite the cry raised by medical researchers that they cannot obtain enough animals.

A veterinary student working in a Chicago medical school wrote: "The animals here are not conditioned in any way preoperatively; their state of nutrition is unbelievably poor. They cannot possibly stand the shock of major surgery, much less major butchery." She said that of 50 dogs that underwent the heart-lung operation in that school in 4 months, not one survived.[1]

"BLACKEST SPOT IN THE HISTORY OF MEDICAL SCIENCE"

The late Dr. Robert Gesell, professor of physiology at the University of Michigan, stated in the Annals of Allergy for March–April 1953: "We are drowning and suffocating unanesthetized animals—in the name of science. We are determining the amount of abuse that life will endure in unanesthetized animals—in the name of science. We are observing animals for weeks, months or even years under infamous conditions—in the name of science. This may well prove to be the blackest spot in the history of medical science."

Today animals in research laboratories are burned, baked, frozen, crushed, starved, strangled, and skinned alive, sometimes with anesthesia but often without. Conscious animals are pounded to death in revolving drums to test their reaction to shock. Cans of dynamite are tied to the heads of dogs and exploded to study concussion. The list could go on, and on, and on.

Claire Boothe Luce, author and columnist, former Congresswoman and former Ambassador to Italy, has called the laboratories "the Buchenwalds, the Auschwitzes and Dachaus of the animal worlds."[2]

SCIENTIFIC BOONDOGGLING, REPETITIOUS WASTE

Many scientists, ambitious to publish something in the journals and apparently short on original ideas, stage elaborate experiments in order to "prove" the obvious. For instance, it has been observed for centuries that human beings subject to prolonged starvation, such as shipwreck survivors, react with painful and dangerous symptoms when suddenly fed.

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[1] Margo Nesselrod in Popular Dogs. February 1960.
[2] Private letter. Aug. 17, 1960.

Yet one experimenter, with a long record of interest in the starvation of animals, felt impelled to try it on four dogs. He subjected them to 28 periods of prolonged fasting which varied upward from 11 days. When they were starved to the verge of death he offered them hearty meals. The results were foreknown.[3] Is this science?

Other researchers go on piling up vast statistical totals far past the point where this could affect the results. An eminent endocrinologist in Montreal spent 14 years torturing 15,000 rats to death in a variety of ingenious ways, in order to study the effect on their adrenal glands and other organs.[4] But since the post mortem findings showed no deviation whatever, it was pointed out by a critic that under the laws of statistics the learned doctor would have proved just as much if he had stopped with the first 500 rats.

Under the laissez-faire system which now prevails in medical research there is no check whatever upon the wasteful repetition of experiments for which the taxpayer pays; no check on careless planning; no check on the outright sadist, who surrounds his real subconscious motive with a fog of scientific terms.

In a Boston medical school 21 dogs under light sedation were immersed in a tub of water just above freezing to observe how long it would take them to "collapse." They were then revived in warm water, immersed again in the freezing water in order to time the second "collapse." That was the sole purpose of the experiment. It had previously been performed on other dogs without any sedation whatever.[5]

One may ask again, is this really science?

A team of New York City experimenters reported in 1958 that they had subjected 18 unanesthetized dogs to massive doses of irradiation on the head. The dogs died in from 14 to 28 hours, their lingering agonies being described in some eight polysyllabic scientific words. The main finding of the experiment was the fact that heavy irradiation on the head damaged certain vital centers in the brain, a result which would have surprised no one.

The researchers acknowledged that the lethal dose of X-irradiation to the head had previously been tried out on mice, guinea pigs, rabbits, and monkeys, with results very similar to their own, and they then arrived at the earth-shaking scientific conclusion that "species differences, among other factors, appear to be responsible for the differences in results."[6]

IT'S TIME FOR LEGISLATION

It is time to turn the searchlight of publicity on the laboratories. It is time to demand immediate and drastic reform in the care of experimental animals.

It is time to set up a central authority or clearinghouse over animal experimentation which would perform the following functions: (*a*) elimination of wasteful repetition, (*b*) subjection of all plans involving painful experiments to the severest scrutiny.

Two bills have been introduced in Congress which would impose minimum humane standards on institutions and individuals seeking Federal grants for research. They are H.R. 1937 and H.R. 3556. Both bills require the licensing of experimenters; both require the advance filing of project plans for research which involves living animals. The principal difference is that under the first bill the administrator would be the Secretary of Health, Education, and Welfare; under the second it would be a special commissioner of laboratory animal control.

Write your Congressman and tell him that you support legislation to protect lab animals. Write your Senators and ask them to sponsor similar measures in the Senate. Write to Chairman Oren Harris of the House Interstate and Foreign Commerce Committee and ask for an immediate hearing on both bills. All addresses are House (or Senate) Office Building, Washington 25, D.C.

Call the matter to the attention of your pastor. Write a letter to your local editor. Tell your friends.

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[3] American Journal of Physiology, April 1952, pp. 249–253.
[4] New York Times magazine section, Dec. 16, 1951.
[5] American Journal of Physiology, vol. 146, p. 262, 1946.
[6] Ibid., August 1958.

If you wish further information on the bills, it may be obtained from the following: for H.R. 1937, from the Animal Welfare Institute, 22 East 17th Street, New York 3, N.Y.; for H.R. 3556, from the Humane Society of the United States, 1145 19th Street NW., Washington 6, D.C.

Mrs. PAUL M. TWYNE, *President*,
Mrs. C. DODSON MORRISETTE, *Vice President*,
Mrs. HELENA HUNTINGTON SMITH,
Members of the Committee on Laboratory Animals.

Mr. ROBERTS. Dr. Brayfield.

STATEMENT OF DR. ARTHUR H. BRAYFIELD, AMERICAN PSYCHOLOGICAL ASSOCIATION

Dr. BRAYFIELD. My name is Dr. Arthur H. Brayfield, Mr. Chairman. I am the executive officer of the American Psychological Association.

The association, founded in 1892 and incorporated in 1925, is the major psychological organization in the United States. With a membership of 20,000 members, it includes most of the qualified psychologists in the country. The objects of the association are to advance psychology as a science and as a means of promoting human welfare—and I emphasize this because the image of the psychologist is not well known, and I suspect that our most extensive interest in animal behavior is not thoroughly understood, so I am taking the liberty of stressing this in this presentation.

I am appearing in opposition to the proposed legislation contained in H.R. 3556 and H.R. 1937.

The first animal laboratory in American psychology dates back more than 75 years. Today, courses in animal behavior, based in large part upon the findings coming out of animal laboratories, are standard offerings in departments of psychology in colleges and universities throughout the country.

The investigation of animal behavior, in both laboratory and field settings, is, currently and historically, an active area of psychological inquiry. Such studies are of intrinsic interest in man's quest for understanding of natural phenomena, and they contribute importantly to the improved care and conservation of animal life, both domestic and wild. Studies of animals by psychologists provide significant methodological and substantive advances which illumine our understanding of a wide range of human behavior.

Psychologists do indeed have an informed and real interest in the pending legislation to which this hearing is addressed and to which we stand opposed for the major reasons now to be presented.

I should like to describe briefly the ethical concerns of psychologists in the matter of the use and care of animals for psychological experimentation.

This is a common meeting ground for all persons concerned with this legislation.

Psychologists, like other scientific groups, are governed in their behavior by strict self-imposed controls. By custom, tradition, and convention, high standards of conduct and performance are required of themselves by psychologists. Additionally, the members of the American Psychological Association subscribe to a formal code of ethical behavior, and procedures for its application are spelled out in the by-laws of the association.

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Specifically, principle 16 of our ethical standards states:

> The psychologist assumes obligations for the welfare of his research subjects, both animal and human—

and subsection (d) states:

> A psychologist using animals in research adheres to the provisions of the rules regarding the use and care of animals for psychological experimentation, drawn up by the committee on precautions and standards in animal experimentation.

For many years, the association has had an active committee on precautions and standards in animal experimentation which has cooperated with our colleagues in other disciplines in evolving effective safeguards for the use of animals in experimentation in order to assure every consideration for the health and welfare of such subjects.

The committee's present revised statement on standards, which, I may say, surpasses the presently proposed legislation in its provision for the welfare of animal subjects, is now out for mail ballot approval by our governing council of representatives; I shall file copies with this committee as soon as it is officially approved.

In view of the longstanding and continuing concern demonstrated by psychologists, as well as our colleagues in other disciplines, for the welfare of their animal subjects, combined with our intimate knowledge of present practices in laboratories throughout the Nation, I am led to strongly state that there is no compelling evidence for the need for the proposed legislation.

We do, of course, desire to cooperate and assist in any way possible in the examination of the facts, and respectfully volunteer the review and the services of our relevant committee and our board of scientific affairs.

We are additionally interested in assisting the Congress to frame legislation which would provide additional resources for extending our present knowledge of the husbandry of experimental animals, for disseminating such knowledge, and for the improvement and supplementation of present facilities for the care and maintenance of laboratory animals. The Congress in recent years has recognized the importance of these efforts, and wisely has made initial provision for such activities. We urge the extension of such support.

This, I believe, is the direction in which we must move if we are really to achieve our mutual objectives concerning the welfare of animals.

Finally, I wish to call into question the wisdom of the proposed legislation without further reference to the issue of need.

I regret to say that H.R. 3556 is so overwhelmingly ambiguous and vague in its statement of performance criteria and requirements and so unbelievably specific in section 3 in stipulating total ignorance, as an essential administrative qualification—"no person who is or has ever been connected with any laboratory shall be eligible for appointment as Commissioner"—that I am unable to pursue the matter of this particular bill.

Whereas H.R. 3556 unfortunately is a blunt instrument and one capable of massive damage to scientific work, H.R. 1937 is more finely honed, suitable to more discriminating but equally disabling application, in its present form.

The preamble to H.R. 1937 is not clear as to its implications for a behavioral science such as psychology, or, for that matter, many other kinds of investigations as, for example, the beef and poultry production research carried on in agricultural experiment stations.

Sections 3(a) and 4(g) not only would excessively hamstring but also probably make impossible innovative research in many important areas. This is a strong statement but is representative of the considered judgment of experienced and highly qualified psychological scientists. Innovative research, particularly at the pilot study stage, does not necessarily proceed according to a well-defined plan. It frequently has the characteristics of a multiple-contingency situation where all the possible contingencies cannot be foreseen in advance. A bold and decisive change in procedures or the direction of an experiment may be required in a matter of minutes or a few hours. Innovative research has, I believe, many of the characteristics of a brilliant parliamentary maneuver or a "tide-turning" extemporaneous speech. Like these, its essential component is an artistic human act performed at a critical moment in time. Innovative research does not, in the nature of things, lend itself to advance filing and notification. The provision simply would not work.

We have no objection to the standard laboratory procedures of maintaining systematic records. But section 4(h) is a useless requirement wasting the time of already scarce and overburdened scientific personnel.

Section 5 gives no assurance that the Secretary would apply appropriate standards for applicant qualifications, and this is a matter of concern to qualified investigators.

There is nowhere in the act a statement of the minimum qualifications of the "authorized representatives of the Secretary" and it also poses serious problems of scientific manpower recruitment and utilization.

I see little or no prospect for the effective and equitable administration of some of the dubious requirements now set forth in these proposed pieces of legislation.

Thank you for the opportunity to testify in opposition to H.R. 3556 and H.R. 1937.

Mr. ROBERTS. Thank you, Doctor. We appreciate your appearance and your statement.

At this point in the record, I wish to insert a number of statements that have been received by the committee.

(The statements referred to follow:)

STATEMENT OF STEFAN ANSBACHER, SC.D., SCIENTIFIC AND MEDICAL CONSULTANT IN SUPPORT OF H.R. 1937 AND S. 3088

For over 2 years I have supported this kind of legislation. I have read the arguments by Dr. Dragstedt (June 3, 1960) and others against it; and at first I had a negative reaction, because I know that a "scientist" doesn't need legislation of this kind.

I also realized, however, that there are so many "charlatans" that a bill with teeth in it will do more good than harm.

In August of 1959 I experienced a scene that can hardly be described in a letter. Let me say that I saw utmost cruelty inflicted upon an entire group of animals by a man "in charge" of them. He was so "mad" that the veterinarian who was present with me had to assist me in stopping the "game." It turned out that the man, a native of Holland, had been in a Russian concentration camp during most of World War II. For some legal reasons, he couldn't be fired. Had H.R. 1937 or S. 3088 existed, perhaps he would have refrained from

the game, fearing the loss of his position as a result of the loss of the license by the institution.

I urge that this measure becomes the law of the land.

TESTIMONY FOR NECESSITY OF H.R. 1937 AND S. 3088 BY DR. GULIELMA F. ALSOP

It is with a great sense of relief and hope that I endorse Representative Griffiths' bill H.R. 1937 and Senator Clark's bill S. 3088, for the humane treatment of laboratory animals. Having been a practicing physician since 1908 and having followed with appreciation the beneficial results in combatting human illness with knowledge gained from animal experimentation, it has been with great horror that I have read the report compiled by the Society for Animal Protective Legislation, concerning inhumane conditions found in a number of laboratories. In some cases the inspectors have seen dogs kept in cages 3 to 4 years. In the case of one dog the attendant said he had been caged without being taken out for 7 years. Cats were seen in cages too small for them to sit up or stretch out and innumerable other cases were observed of postural cruelty and immobilization. "Drumming" in which the exhausted and terrified animal whirls around and around in a revolving cage to see how soon it will die of fatigue reminds me of Buchenwald.

Though animals are not human beings, it is the similarity of their reactions to human reactions that makes the results of experiments done on them transferable in part to human beings under like stimulation. Animals are not inanimate testing machines. They are warmblooded creatures filled with love, loyalty and affection for their human masters, able to suffer, to be exhausted, to undergo terror and pain and stress, to die eventually of an inoculated human disease. In their kinship to us lies their experimental value to us.

No one wants atrocities to happen or to continue to happen. Those to whom we delegate our responsibilities must be restrained and guided by law and by its thorough enforcement from the results of haste and carelessness and callousness and cruelty. The passage of H.R. 1937 and S. 3088 will endeavor to insure that all animals used for experimental purposes will be able to live in conditions of comfort with food and water, protected from sun and rain, heat and cold, provided with adequate exercise, and, most important of all, free from continued pain.

Nor will the passage of this bill interfere with or curtail the experimental use of animals for medical and scientific research, as may be seen from the fact that England, which has stringent laws for the humane care of its experimental animals, has received the greatest number of Nobel prizes per capita of population for medical and physiological research, insuring freedom from pain and cruelty in all experiments performed. Indignation is not enough, nor yet compassion. The protection of law is needed.

Therefore, I urge upon you the passage of this bill—in justice and mercy to the animals in our power.

STATEMENT OF MALCOLM P. RIPLEY, FOR HUMANE TREATMENT OF ANIMALS USED FOR EXPERIMENTS AND TESTS, H.R. 1937 AND S. 3088

As a private citizen, I urge enactment of H.R. 1937 and S. 3088 for humane treatment of animals used for experiments and tests.

On my visits to several institutions which kept animals for experiments and tests, I discovered that there was no set standard for the care of said animals. In some, the care was good, while in others the care was extremely bad. It is therefore necessary that we have some legislation which will require a standard for the care of the animals that donate so much to the well-being of humans. This standard I feel should include the subject of humane design of experiments and prevention of needless pain infliction, along with caging, diet and exercise, as well as the handling of the animals. This can only be accomplished through a Federal law.

The usual complaint one first sees is that the cages the animals are in are all small. For the smaller animals, such as mice, rats, and hamsters, the cages are usually adequate, while I have never seen a cage large enough for a rabbit. Practically every cage has a wire bottom and the animals are subjected to the wire on their feet and bodies at all times. For the larger dogs, such as a police dog, the same cage is used as for a smaller dog. Therefore, the large dog is

unable to stand up or lie down in a normal position. The rabbits are allowed only to crouch, as their cages are so small. At one institution a dog that had recently undergone major surgery (open heart operation) had a litter of six puppies. The mother and all her puppies had to lie on wire mesh and when the puppies (whose eyes had not yet opened) moved, their paws went between the openings of the wire mesh. Even to the most uninformed person, this treatment could never be construed as humane care, nor for that matter as adequate care. The cruelty to the puppies could be so easily avoided if one had a proper cage or if, lacking this, a common, ordinary newspaper had been used to give support to the mother and her puppies.

It has often been said that, "Cleanliness is next to Godliness," and one who has visited almost any place that houses animals will presume that he is entering the opposite place from heaven. The degree of this feeling is of course dependent on the ability to keep the cages clean and dispose of the wastes. If this is done twice a day, the odor is mild, but if it is done once a month or week, it becomes positively unhealthy for the animals and for any person entering the quarters. This is one of the main complaints of any person who inspects and the need for legislation to set a standard is very necessary and long overdue.

In many animal rooms, the cages are stacked in tiers, so that it is impossible to clean them properly. Often on Sunday no one is in attendance, so no animal gets any fresh water or food. At one place I visited, the attendant informed me that hamsters should only have water through vegetables, while at another I heard that cats didn't ever drink water. These are, of course, idiotic statements for anyone so to inform visitors and would tend to show that the care, feeding, and watering must be enforced by law.

After a person who has visited one of these animal quarters leaves, he will be aware that he has been either lucky that he has been to a unit which has humane care and treatment for their animals, or with a sense of hurt and lack of faith in the human race that people could care so little for live animals who are devoting their lives and being for the preservation and betterment of life for man. In the latter case, the comments range from "inhumane" to "inexcusably deplorable," and one wonders why a law has never been passed to protect these animals.

One has only to go through a number of organizations which keep animals for the purpose of experiments and tests to come across an example of complete misery and pain. Many times after a dog or some other animal has been used for practice surgery by some young doctor in training and the operation has been completed, the animal is returned to his cage without any recovery care, either to live or die. Why cannot this same young doctor learning to operate complete the case by painlessly destroying the animal? One can readily realize that legislation is needed so that the animal will be destroyed painlessly as soon as he has completed his value in training or research.

I feel also that there is undoubtedly a great deal of duplication of research and certainly some useless research performed which could be controlled by legislation. By having a set of standards enacted by legislature, we could make our researchers more careful and considerate. If they were to set this standard for animals, they would also set this standard for their research and I am sure make greater strides than they have heretofore.

You are no doubt being offered many methods under which the care of animals used for experiments and tests could be accomplished. One method which has been suggested is by voluntary control by some research organization. Unfortunately, voluntary control never fully succeeds. If it did, we would no longer need the Internal Revenue Service to check our tax returns, as we could have some voluntary group, such as our friends, check our returns. We would no longer need our State Department, as all countries would be able to solve their problems through voluntary control, such as the United Nations. I would again stress at this point the need for Federal legislation covering the humane treatment of animals used for experiments and tests and the humane design of experiments and prevention of needless pain infliction.

I happen to be a partner of a New York Stock Exchange firm and am regulated in my transaction of business by several organizations. These are the Securities and Exchange Commission, the National Association of Security Dealers, and the New York Stock Exchange, as well as my firm's rules. All stock exchange firms have the same regulations and yet one finds by reading the newspapers that some infractions, either large or small, of the rules do occur and must be dealt with. This unfortunately will be the case with the humane

treatment of animals used for experiments and tests, unless proper inspection is carried out by a Federal agency. It is for these reasons and findings stated heretofore that I strongly recommend the enactment of H.R. 1937 and S. 3088.

I therefore trust and urge the Congress to act favorably and promptly on the pending legislation.

MALCOLM P. RIPLEY.

Mr. ROBERTS. This will conclude the hearings for today. The committee will stand in recess until 10 o'clock tomorrow in the same hearing room.

(Whereupon, at 5:30 p.m., the hearing was recessed until 10 a.m., Saturday, September 29, 1962.)

HUMANE TREATMENT OF ANIMALS USED IN RESEARCH

SATURDAY, SEPTEMBER 29, 1962

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HEALTH AND SAFETY OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10 a.m., in room 1334, New House Office Building, Hon. Kenneth A. Roberts (chairman of the subcommittee) presiding.

Mr. ROBERTS. The subcommittee will please come to order. I have a statement here from Senator Joseph S. Clark, which I would like to read, and then place in the record. The statement was sent to my office this morning.

(Senator Clark's statement follows:)

STATEMENT OF SENATOR JOSEPH S. CLARK ON THE HUMANE TREATMENT OF LABORATORY ANIMALS

I appreciate this opportunity to submit a statement in favor of H.R. 1937, to provide for the humane treatment of animals used in experiments and tests by recipients of grants from the U.S. Government and by agencies and instrumentalities of the Federal Government. I have an identical bill, S. 3088, in the Senate because I believe that the animals upon which so much scientific research depends should receive the best possible treatment. Certainly they should never be subjected thoughtlessly or unnecessarily to pain and suffering.

It is the purpose of this legislation to encourage the humane design of experiments, to provide such minimum requirements as a comfortable resting place, adequate space and facilities for normal exercise and adequate sanitation in premises where experimental animals are kept, to insure that they do not suffer unnecessary or avoidable pain through neglect or mishandling and to prevent suffering which is both severe and prolonged.

I do not see how anyone can seriously quarrel with these aims. It is my firm belief that the Congress should provide a definite guarantee that humane practices are employed wherever Government funds are being used to support experiments on living animals. Just as responsible investment bankers in time found that the Securities Exchange Commission is in their best interest, so responsible scientists would find this legislation will benefit them by controlling the acts of the few irresponsible and thoughtless individuals among them whose actions necessitate this legislation.

Mr. ROBERTS. I have a statement from the National Foundation, formerly the National Foundation for Infantile Paralysis, Inc. The statement is signed by John J. O'Connor, attorney. We will place this in the record.

(The National Foundation's statement follows:)

THE NATIONAL FOUNDATION,
MEDICAL SCIENTIFIC RESEARCH, PROFESSIONAL EDUCATION AND MEDICAL CARE,
New York, N.Y., September 27, 1962.

Re H.R. 1937 and H.R. 3556.

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Room 1334, House Office Building,
Washington, D.C.
(Attention of Hon. Kenneth A. Roberts, chairman, Subcommittee on Health and Safety).

GENTLEMEN: Your notice, dated September 24, 1962, of public hearings to be held on September 28, 1962, by your Subcommittee on Health and Safety on H.R. 1937 (Mrs. Griffiths of Michigan) and H.R. 3556 (Mr. Moulder of Missouri)—humane treatment of laboratory animals, was received on this date. In view of the short notice and the resulting inability to prepare and file the statement of a witness 5 days in advance of said hearing or in lieu thereof a statement for the record, I respectfully request that you allow this record to remain open for a reasonable period of time for the purpose of filing a statement for the record in the event that this organization desires to file such a statement.

Very truly yours,

JOHN J. O'CONNOR, *Attorney.*

Mr. ROBERTS. Now I have a statement from Rachel Carson, who has written two very wonderful books, and maybe more. I am sure most of you are familiar with her work. I will read the statement and then place it in the record.

(The statement of Rachel Carson follows:)

STATEMENT OF RACHEL CARSON IN SUPPORT OF H.R. 1937

My name is Rachel Carson; I am a biologist and author. I am sending this statement in support of H.R. 1937, and I request that the statement be made a part of the printed hearings on this bill.

The situation which H.R. 1937 seeks to remedy has developed with great rapidity in recent years and it is imperative that prompt action be taken. The rapidly expanding development of new drugs, food additives, pesticides, and many other materials requiring testing on animals prior to human use has enormously increased the number of animals subjected to laboratory experimentation. The growing population with attendant greater need for the training of physicians and medical researchers is another factor in the increased use of laboratory animals.

My reasons for supporting this bill are twofold: the first, scientific; the second, humanitarian. When animals are maintained under conditions of poor housing, lack of exercise, exposure to prolonged suffering and shock, the results of experiments can only be misleading. In the interest of scientifically accurate results, it is necessary that test animals be maintained in a state of general well-being.

I support this bill also for moral and humanitarian reasons. No nation that calls itself civilized can allow the experimental animals to whom we owe so much to be subjected to neglect and mistreatment and to be forced to undergo unnecessary pain and shock. Our national conscience demands that standards be set up for proper laboratory conditions, for avoiding unnecessary experiments, and for the humane conduct of experiments actually carried out.

Legitimate scientific research will not be hampered by the provisions of H.R. 1937; instead, higher standards of research and more accurate results should follow its enactment.

Mr. ROBERTS. The first witness this morning is our colleague from Nevada, the Honorable Walter S. Baring. Mr. Baring, we will be happy to hear you at this time.

STATEMENT OF HON. WALTER S. BARING, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. BARING. Mr. Chairman, I have for several years been interested in the humane treatment of laboratory animals, and have in my files many, many letters from my constituents urging me to support H.R. 1937 and H.R. 3556 in an effort to bring about better treatment of laboratory animals.

Thousands of animals suffer pain and sometimes the absolute extremes of agony in laboratory testing and I am sick and tired of these laboratory technicians and scientists cruelly mistreating animals, and agree with Congressman Moulder (H.R. 3556) that the bill should contain adequate humane methods. I feel strongly that anesthesia must be provided for all animals undergoing painful laboratory research.

H.R. 3556 would set up certain rules for laboratories which would require humane shelter, food, water, exercise, sanitation, light, temperature, humidity, and ventilation.

Many leading scientists have agreed that the quality and productiveness of medical research would be advanced by improving the quality and care of animals used and also by better statistical design of experiments.

Dr. Mark L. Morris, president of the American Veterinary Medical Association, said before a national assemblage of scientists in September of 1961, that—

> Research conducted on malnourished, diseased, and parasite-ridden laboratory animals will only continue to add misinformation to our medical literature, invalidate research results, increase the cost of research, and interfere with production.

I feel that these words, spoken by one of the most authoritative experts in the field call for close study and thought. Congressman Moulder's bill would improve medical research and protect the laboratory animals, and I urge that this committee give every consideration to the bills on the agenda today and sincerely hope that the committee will have an opportunity to report the bill out of committee at an early date so that action may be taken in this session of Congress on this important issue.

Thank you, Mr. Chairman.

Mr. ROBERTS. We appreciate your appearance and testimony, Mr. Baring.

Mr. BARING. Thank you for the opportunity, Mr. Chairman.

Mr. ROBERTS. I believe we have with us this morning Dr. Herbst.

STATEMENT OF DR. WILLIAM HERBST, WASHINGTON, D.C.

Dr. HERBST. I should like to express my gratitude at having the privilege of appearing here and commenting on H.R. 1937. When I graduated in 1915 my professor of pharmacology and therapeutics told us, "Boys, if you know the therapeutic indications and pharmacological actions of eight drugs, you are qualified to practice medicine."

Since then I have had the privilege of watching the rapid evolution in medicine and keeping in contact with all the basic science activities and participating to some extent in research, I am naturally interested in this bill.

I should like to comment very briefly because I know you gentlemen have had the opportunity of hearing enough information regarding the basic features of this problem not to need any reiteration on my part. The things I should like to comment on are these.

First of all, the experience and evolution of this type of administrative control of the utilization of animals in medical research in other countries, naturally, involves the basic human nature aspect of such activities, forgetting entirely about any political activities whatsoever. That being true, I think it is of some interest and I believe we can get some information out of the fact that, for instance, in England and in Denmark their research has been rather spectacularly improved in caliber and accomplishment as the result of administrative control rather similar to what is proposed in this bill.

The other aspect of it which I should like to comment on is the fact that in view of the fact that the Secretary of Health, Education, and Welfare is going to be responsible for carrying out the activities related to this bill, the Public Health Service as of the current year is administering the dissemination of over $600 million in research projects all over the United States.

In addition to that, I think it is obvious and common knowledge to everyone in this country that the Public Health Service has spectacularly expanded and improved and carried out all of its medical responsibilities in such a way that the authority could not be placed really in any better position than it is planned in this bill.

Those are the chief reasons, Mr. Chairman, that insofar as I am concerned, I appreciate the privilege of appearing here before you and recommending that this bill be enacted successfully into legislation.

If there happen to be any questions that occur to you that I might be able to answer to clarify any of the problems that you have in mind, I would appreciate very much trying to answer them for you.

Mr. ROBERTS. Thank you very much, Doctor. Is it your opinion that animals properly cared for and properly used could perhaps give us an even better quality of medical research than we now have?

Dr. HERBST. Mr. Chairman, I do not think there is any question about that. I think the experience in other countries would more or less support that opinion. I should also like to say that the current developments in cardiac surgery have been as successful as they are as a result of very intelligent, well-controlled utilization of animals in developing the techniques which are being used successfully today by these surgeons who are participating in that type of surgery. Without properly conducted research of this kind, we would not have progressed to the extent that we have at this time.

Mr. ROBERTS. Do you believe it would unnecessarily burden the medical profession if some reasonable controls were placed on the care of animals such as contemplated in this legislation?

Dr. HERBST. I do not, Mr. Chairman. I believe, furthermore, that those who are participating most successfully and most impressively in these fields are individuals who are working in institutions which are already cooperating in many different ways with the funds that are available, the U.S. Public Health Service and the National Institutes of Health, they have a very close liaison today. I cannot imagine any difficulty developing as a result of the stipulations recommended in this bill.

I will say this. For a doctor who might get in his mind some possible research project and he, in order to engage in this project, would have to go through these various formalities and different application mechanisms very well might not result in engaging in that research. I think that is very true.

However, I do not believe that that aspect of any unfavorable consideration of this mechanism would be of such magnitude as to feel that it should be used, you might say, as any evidence against the development of this type of administrative authority.

Mr. ROBERTS. Do you think that the inspection phases and record-keeping could be worked out in such a way that it would not unduly burden people who are engaging in research?

Dr. HERBST. I would answer vigorously affirmatively in that regard because the Surgeons General of the Public Health Service over the years I am sure, according to your own observation, have been unusually capable individuals, particularly since the advent of Surgeon General Parran. They have engaged in the broadest possible activity in medicine in all of its phases. I cannot think of a single way in which a single one of the Surgeons General have not done a most remarkable job. I think they are all dedicated, they are underpaid insofar as their responsibilities and functions are concerned. They are very remarkable people.

Mr. ROBERTS. Thank you very much. As I mentioned before off the record, knowing your son as well as I do, I know you are a very modest individual, but I would like you to detail some of the training and experience you have had in your practice here in Washington.

Dr. HERBST. Well, I have engaged in research in the action of certain drugs in regard to malignancy. I have participated in the development of the endocrine control of cancer of the prostate to an appreciable degree. I happen to be the incumbent chairman of the research committee of the American Neurological Association and at the present time am the president of the American Board of Urology. I am an associate professor of urology at Georgetown University Medical School. I participate in the training programs of Walter Reed and Naval Medical Center and the National Institutes of Health.

Mr. ROBERTS. I certainly think that experience entitles you to speak authoritatively on this problem. We are certainly grateful to you for coming.

Dr. HERBST. I might say in the meantime I practice urology. Thank you very much.

Mr. ROBERTS. Thank you so much for your appearance.

Our next witness will be Mrs. Robert Gesell of Ann Arbor, Mich. Mrs. Gesell, other witnesses have testified to the wonderful work of your husband, and we are delighted to have you appear here to make a statement.

STATEMENT OF MRS. ROBERT GESELL, ANN ARBOR, MICH.

Mrs. GESELL. After 50 years of observing the sporadic attempts of some investigators in this country to provide moderately humane treatment of experimental animals by their own efforts, I wish to testify in favor of the Griffiths bill.

Darwin and Huxley and other outstanding scientists felt the need of regulation of animal experiments in the early 1870's, and as a result of their humanitarian efforts the British act was passed in 1876. It is on this act that the very modest Griffiths bill is based. Neither the British act nor the Griffiths bill are in any way antivivisectionist in intention but they are against unnecessary cruelty in vivisection; it would seem that societies and individuals who violently oppose both the 86-year-old British act as well as the Griffiths bill, condone cruelty to animals by investigators.

Some 40 years ago Dr. Cannon of Harvard University was instrumental in writing rules for experimentation on animals. These rules were widely displayed in research laboratories. My husband, a physiologist, greatly admired Dr. Cannon and thought him to be a humane as well as a brilliant man, so he believed these rules were largely for the protection of laboratory animals. Dr. Chauncey Leake about a year and a half ago said he had thought so too. But in June of 1952 Dr. Carl Wiggers, chairman of the department of physiology at Western Reserve, stated in a speech at his class reunion at the University of Michigan, that:

> Some years ago, approximately 1918, the AMA appointed a committee headed by Dr. Cannon for the primary purpose of combating antivivisection propaganda. Toward this end a set of rules and regulations was drawn up which reflected common practice in different laboratories. These have ever since been posted conspicuously in hospitals and laboratories to remind investigators, it is true, but chiefly to assure visitors that animal experiments are being conducted and supervised properly. Those rules were not drawn up, as has been misquoted, because Dr. Cannon saw the need of a restraining force to curb man's curiosity within proper bounds. I was there, Charley.

Dr. Wiggers then said that he had been impressed by the care taken in the tumbling of unanesthetized rats in a Noble-Collip drum (their paws were bound together so they could not even try to protect themselves) from pain. Of the contusions from which the rats died 47–50 minutes later he said "discomfort anxiety and mental perturbation of rats—yes, but certainly no severe pain. He then went on to say:

> Perhaps it is significant that rats were used. A similar apparatus for tumbling dogs and cats could have been built but the thought, I think, has never suggested itself.

Noble-Collip drums are still used by investigators in experiments on so-called stress. Dr. Wiggers also defended the slow drowning of 160 dogs (unanesthetized) and the infliction of contusions by 700–1,000 blows on the legs of anesthetized dogs by a specially designed leather mallet. These dogs were promptly allowed to come out of the anesthetic and to die from 50 minutes to 9 hours later.

I have a copy of Dr. Wiggers' complete speech taken from a recording which I would be glad to read, though it is fairly long. This public statement, as well as numerous denunciations of any wish to curb cruelty in laboratory animals as either antivivisectionist or crypto-AV, makes voluntary regulation of cruelty to experimental animals by presentday scientists appear doubtful. In fact, most organizations of research men react violently to any thought of reform

In 1946 Dr. Anton Carlson of the University of Chicago wrote my husband, as he did many physiologists at different universities, asking him to obtain money and members from the University of Michigan to support a national commission for the protection of medical sci-

ences, which was to be organized to fight A.V. propaganda. Dr. Gesell complied, and wrote Dr. Carlson the following letter, dated February 8, 1946:

DEAR DR. CARLSON: My answer to your letter of January 26 is delayed, due to the absence of Dean Furstenberg from the city. I have spoken to him since his return, and he asks me to tell you that he is in sympathy with the objective of the National Commission for the Protection of Medical Sciences. He also has every expectation that the university will subscribe $300 toward financial support. You will find enclosed the signatures of members of my department urging financial support of the commission by the federation. If the work of the commission is well done, it will be a great contribution to the biological sciences, for we need a comprehensive education of all concerned.

In that connection I would like to suggest that the commission give attention to the education of the men of science as well as the public for, in my opinion, much of our trouble originates in our own ranks. I am not one of those who believe that conditions of animal experimentation are ideal. I believe the commission could raise the question whether the experimental animal is receiving the consideration to which he is entitled particularly as regards survival experiments in which the animal is likely to suffer.

It is my experience that there are always a number of us who may be too sure of man's privilege to experiment on the lower forms. Some system of scrutinizing the soundness of biological problems and the skill and wisdom and consideration of the scientist would do much to convince the public that our minds are open to all sides of the problem. I doubt the wisdom of a policy which offers no supervision of animal experimentation whatever.

The surest way of preventing interference from the outside by enactment of laws restricting experimentation is to convince the public that we ourselves see the soundness of proper supervision. Our committee should be best qualified to accept the responsibility of the supervision.

Sincerely yours.

Dr. Carlson replied to this excellent letter in such a way that Dr. Gesell believed a policy of proper treatment of laboratory animals would follow eventually. However, 6 years later the only change was more animals used by more investigators in more research projects, many of which were repetitions of previous work. So at the New York federation meetings in spring 1952 in a closed meeting of the Physiological Society, Dr. Gesell expressed his opinion of the ways of the National Society for Medical Research, as the "National Committee for the Protection of Medical Sciences" was now called, as follows:

I will not quote what he said, because a psychologist who testified yesterday said exactly what Dr. Gesell said at this meeting. However, he did not say what happened afterward.

The Physiological Society objected strongly to these views and a committee chosen at least in part of active proponents of the NSMR had a hearing at which Dr. Gesell was the defendant. It was at this hearing that Dr. Visscher said "There can be no cruelty in the pursuit of knowledge." This remark summarizes the general attitude, at least in public, to any form of regulation of the treatment of the animals they use and call "living test tubes" and "systems" and "preparations." Later in 1953, at the International Congress in Montreal, another committee headed by Dr. Essex, president of the Physiological Society, now president of the National Society for Medical Research, talked at length with Dr. Gesell, who then advocated some form of government control such as the British Act of 1876. Dr. Essex promulgated a new set of guiding principles which superseded those of Dr. Cannon and are now displayed in laboratories, where conditions may follow these principles or others where the principles are entirely disregarded, but

the slogans of this meeting were "patience" and "nothing British." In other words, no form of regulation that might actually curb cruelty to the millions of vertebrate animals used today.

The British law does offer some protection to laboratory animals but it is anathema to those who feel they have a God-given right to treat animals as they and their dieners, student assistants and their candidates for Ph. D.'s and what I have heard a research man call "a pair of hands" see fit in the complete seclusion of laboratories. The most recent attempt by scientists to enforce some measure of protection for laboratory animals is the 1960 rule of the American Journal of Physiology which is to refuse publication of papers that show no consideration for the animals used in the experimental procedure.

This would seem to be the most hopeful attempt to prevent cruelty so far. But reading the American Journal of Physiology for 1960 and 1961 and the first six numbers of 1962 and then judging by the papers published therein it appears that either this rule is very laxly enforced or that there are very different standards of proper treatment of animals by different judges of the papers submitted.

This diversity of opinion on humaneness is always found and shows again how important an unbiased law requiring individual licensing, unannounced inspection by incorruptible and informed inspectors, and above all the pain rule which prohibits severe and prolonged pain to any animal even though the hoped for result of the experiment has not been attained.

These three basic requirements of the British Act are incorporated in the Griffiths bill which should be passed as promptly as possible—for we are already 86 years behind in proper consideration of the millions of experimental animals we are exploiting every year.

Mr. ROBERTS. Thank you very much. How long have you been interested in this matter, Mrs. Gesell?

Mrs. GESELL. Fifty years.

Mr. ROBERTS. I take it from your statement that you see very little progress that has been made in the 50 years as far as any change in the opinions of the people who oppose this legislation.

Mrs. GESELL. I am afraid it is the reverse. If there were even the slightest progress, I do not think any of us would be here.

Mr. ROBERTS. It is just the other way?

Mrs. GESELL. Exactly.

Mr. ROBERTS. Thank you so much. I appreciate your very fine statement.

Mrs. GESELL. Thank you.

Mr. ROBERTS. I will call Mrs. Gordon B. Desmond, secretary, Federation of Homemakers, Arlington, Va. Mrs. Desmond's statement will be filed for the record.

(Mrs. Desmond's statement follows:)

STATEMENT OF MRS. GORDON B. DESMOND, SECRETARY, FEDERATION OF HOMEMAKERS

Mr. Chairman and members of the Health and Safety Subcommittee; I am Ruth Desmond, secretary of the Federation of Homemakers, a nationwide organization of public-spirited housewives who endeavor to obtain uncontaminated food for their families. The federation's officers welcome this opportunity to publicly support legislation designed to remedy the conditions under which laboratory animals are used in scientific experiments and research by recipients of grants supported in whole or in part by Federal funds, through the licensing of all scientists performing said animal experiments in institutions receiving Govern-

ment funds. It is our understanding that the scientists so licensed would submit plans or details of said proposed animal experiment to either the Secretary of Health, Education, and Welfare or other designated authority for approval. Under the provisions of the proposed legislation this would not deter nor hamper said investigation.

This federation was formed by concerned housewives who attended public hearings on the food additives legislation conducted by this committee. Since its formation, federation members have maintained an interest in legislation being considered by this committee which has dealt with the wholesomeness and safety of food, cosmetics, and drugs. At the color additives hearings, this federation first publicly expressed misgivings of the validity of animal tests which did not consider the total impact of the environment upon said animals—potentialism. It was pointed out then by the federation that animal tests of food dyes and food chemicals were usually performed on mature animals in good health who were fed a bland diet with only the chemical or dye to be tested added to its balanced diet. However, humans, sick and well, young and old, and even pregnant, ingested the item being tested under vastly more complicated conditions. Later, at a public hearing on the value and need of the Delaney anticancer clause in our recent food and color additives laws, a scientist with NIH pointed out that animal tests of food chemicals should be conducted under conditions which simulate those of man's environment. Such recommended tests would no doubt require larger animals since they have been found to react to many chemicals in the same way as man and the testing time would be much longer than now expended.

After the thalidomide tragedy became known to the public—it was brought out at the special public hearing, conducted by Senator Hubert Humphrey, that a wider variety of animals must be used in the testing of new drugs (different species) and that many drugs must be tested on pregnant animals before used by the public.

The enforcement of the Miller Pesticide Act of 1954 has necessitated the use of many test animals in the evaluation of the safety of insecticides when used exactly as directed. However, tests for genetic damage to human cells still must be carried out. Then the Food and Color Additives Acts and the Chemical Preservatives Act (postharvest treatment of fruits and produce) all require experiments on animals to demonstrate the safety of the chemicals in the amounts permitted as residues. The new drug act, when enacted, will require the use of more animals than previously used by the manufacturers of new drugs to reduce risks of unknown and unrevealed side effects on patients.

So it is appropriate that homemakers who have studied the aforementioned legislation and appeared before this committee previously in support of legislation to protect the health of the public should now endorse and support legislation which will provide humane treatment for the animals used to test the safety of pesticides, chemical preservatives, food dyes, food additives, and drugs.

It is the responsibility of informed, mature citizens to see that the animals used to prove or disprove the safety of chemicals are not abused by those conducting said experiments or their helpers and that said animals are comfortably housed and cared for and humanely destroyed when discovered to be suffering severe and prolonged pain. Humanity owes a debt to these animal martyrs which it can in some part repay by seeing that in the future laboratory animals are humanely treated; especially when the research is conducted partly or wholly with tax funds.

Federation members recall that the late Sir Edward Mellanby proved through his experiments that agene fed in bread to dogs caused them to have convulsive fits and die. As a result of this experiment, this chemical is no longer used to mature flour. Dr. Wilhelm C. Hueper, of NIH's Environmental Cancer Section, a recognized authority on the causes of environmental cancers and recipient of a World Health Organization award for his cancer research, proved conclusively through experiments on dogs that beta naphthylamine could cause bladded cancers when ingested. In this particular experiment only dogs reacted like humans to this chemical. As a result of this experiment, the Food and Drug Administration banned the use of certain oil-soluble yellow and orange food dyes long used to color butter, margarine, cheese, cake mixes, icings, popcorn oil, potato chips, and other food items. In the all-too-recent past, rats and mice were used to test the presumed harmlessness of food dyes. FDA scientists, in testing certain reactions of humans to red No. 32, used for many years to dye oranges and color confections, discovered these reactions were not experienced by rats and mice.

Then it was learned that dogs reacted to this red No. 32 in the manner of humans. Now FDA is carrying on lifetime tests of certain food colors with dogs.

Aramite, a cancer-inciting miticide, was first tested on rats and mice with only small tumors noted. Later, Aramite was tested on dogs and produced cancers of the bile ducts. A second scientific panel appointed to consider the effects of this miticide gave it a zero tolerance—setting aside the tolerance of 1 part per million given it by the first scientific panel after evaluating the tests on rats and mice.

Officers of this federation had the privilege several years ago of touring the facilities of FDA, the consumers' agency, and there observed many species of animals being used to test the potency and purity of medicines, insecticides, cosmetics, dyes—the potency of vitamins. This tour dramatically disclosed the value and importance of animal experiments. Soon primate centers will be established at two outstanding medical schools to study the causes of heart and circulatory diseases.

Frequently the public reads newspaper accounts of new surgical techniques developed through operations on experimental animals. Rarely does the public know of the many animals sacrified before such experiments are successful. And seldom does the public learn that the care and caging of these medical matryrs should be improved—that in certain instances these poor animals are abused and negelected—even sadistically mistreated.

The informed public who know to a degree the debt they owe experimental animals will support legislation aimed to relieve the suffering of these poor animals who have saved humans much physical suffering and even their lives. Although the members of our organization have never visited private laboratories which use experimental animals, they have been saddened to read of the mistreatment, neglect, and callous treatment which certain unfortunate animal victims have needlessly endured. This information has been obtained through reading pamphlets distributed by local humane societies and materials furnished by the Animal Welfare Institute. However, federation officers were distressed to see the FDA dogs, used in lifetime tests of food dyes, living in small, tiered, wire cages in a crowded room in the subbasement of the South Agriculture Building. These officers rejoice that these poor animals will soon have comfortable quarters and exercise ramps in a specially constructed new building. The funds for this needed building were appropriated by Congress when it learned through testimony of animal welfare groups about the plight of these FDA dogs.

It is the understanding of this federation that the proposed legislation now being considered will not interfere with scientific research and investigation. Perhaps it will further it. It seems sensible to assume that animals humanely cared for will produce more valid and conclusive results than those who are neglected and abused—unless the research itself is directed to the effect of neglect and unkindness on living creatures.

Mr. Chairman, it has been a pleasure to appear before your committee again—especially to support legislation which will provide humane treatment for laboratory animals used in research for the benefit of humanity.

Mr. ROBERTS. Mrs. Peyton Hawes Dunn. It is a pleasure to have you. I have been told by some friends and, of course, I knew of your father's work in the Congress and in the Senate, and the high respect in which he was held. I know he did a lot of work later on after he left public life—not public life but political life—as one of the very important men in the Wildlife Federation movement. It is certainly a pleasure to see you carrying on in the great tradition in which he so distinguished himself.

STATEMENT OF MRS. PEYTON HAWES DUNN, WASHINGTON, D.C.

Mrs. DUNN. Thank you very much, Mr. Chairman. I want to say that I was impressed with the way you handled this roomful of people yesterday. Solomon would have had a difficult time. You did a wonderful job and I am grateful for the opportunitv to speak.

Mr. ROBERTS. You are very kind.

Mrs. DUNN. We were also impressed with the effort to obtain from medical witnesses some expression of how far they would go toward realistic Federal legislation to change present really pitiful housing and care of research animals which is a primary concern of WARDS, of which I am the secretary.

The neglected animal in Maine is just as weak a link in our research program as the abused animal in Texas. National standards will require national planning.

You asked a witness yesterday as to whether there was any place in NIH where any attempt to standardize the care of research animals had been established. Let me tell you that there is. It is the Cancer Chemotherapy Section of the National Cancer Institute. These scientists recognize the need for uniformly selected and cared for mice. We visited some of these installations, and they showed the excellent results of centralized planning and provision. We saw the Southern Research Institute at Birmingham, Ala., and later WARDS presented it with an award for good management at an animal care panel convention.

We have with us a report we wrote on the merits of the cancer chemotherapy contract program and will leave some copies. We would like its foreword to be included with these remarks, if possible.

Another arm of the Federal Government which has shown planning and provision for its animal care is the Atomic Energy Commission. They have also been cited by WARDS for humane housing.

WARDS has tried for nearly 10 years to induce medical leadership to see the value of a single high standard of care for animals. Still, there are few standards and even fewer in operation. We have even raised funds for humane quarters at two Washington medical centers to show our real interest in this matter. We realize that the few paragraphs on animal care in the two bills before this committee will not accomplish our purpose. There must be an instrument established by law to correct the present useless waste, neglect, and suffering in this area of research. We favor a Federal institute for laboratory animal care to plan and provide for the necessary manpower, housing, coordinated information, standards and system. Many medical witnesses expressed a need for these things yesterday.

An institute would stop the present costly disorder on national and local levels.

Last year a representative of WARDS visited Harvard Medical School, which is a top recipient of Federal funds, $5,474,712 for building facilities during fiscal years 1957 to 1960. In spite of this, long-term dogs were kept in dark basement quarters built in 1906 called the Farm. Even in Boston it would have to be admitted that Harvard is inaccurate, that this place is no farm. In the same way, many scientists have overlooked completely the modern professional needs of their research animals.

Unfortunately, animal care, except for the Cancer Chemotherapy Section, is in the unsupervised section of NIH operations which have been frequently criticized. Under the present lack of Federal system in this area, it is easy to see why descriptions of cruel suffering and neglect are abundantly true. Human care would be as bad under the same circumstances.

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Institutes to use these animals for research are governed by advisory councils whose members are experts in their given field. Nose and throat specialists are not in charge of cancer research nor is the important function of the National Cancer Institute given to any private organization. The same should be true of animal care.

In 1953, when WARDS was started, complaints came from Chicago about laboratory conditions. We analyzed this report and found that of the 42 charges, 35 could have been corrected with a practical national program confined to the area of professional supervision, humane handling and modern living quarters. Only in the last year have we noted much activity in this direction and nothing that need necessarily survive the present wave of enthusiasm.

Waste is expensive and the unnecessary suffering of these research animals is particularly intolerable to any thoughtful Member of Congress and the citizens of our country. Change must come through an instrument which compares favorably in efficiency and structure with the many health institutes to use these animals in such abundance 60 to 300 millions a year. It is going to be necessary to change the present substandard storage and to maintain and continually improve the institutional handling and housing of these animals. The sooner we start, the better.

Thank you.

Mr. ROBERTS. Thank you very much, Mrs. Dunn.

I am particularly gratified you would pay tribute to the Southern Research Institute. We are very proud of the fine work being done there.

Probably this is not exactly in line with your work, but you undoubtedly remember the late Tom Spize who did some fine work and research in Birmingham, Ala. I was particularly gratified you made a reference to that group.

Mrs. DUNN. Yes, sir.

Mr. ROBERTS. I am informed you have a very good knowledge of the type of housing we find used in keeping experimental animals.

Mrs. DUNN. That is right.

Mr. ROBERTS. I would like to ask you to give us a little résumé of those conditions as you have seen them.

Mrs. DUNN. Well, I have seen Harvard which, has some good quarters but very poor housing and handling of its long-term dogs which were kept in a basement and its short-term dogs in a made-over barn.

Since I complained about Harvard I am not going to be able to see the University of Illinois when I am in Chicago. There is, however, publicity issued by the National Society for Medical Research and also an article in the Animal Care Panel proceedings on these quarters.

From these two articles we know they have 336 dogs in basement cage quarters with no means of getting out at cleaning time and are hosed off along with the cage.

We consider this very bad animal husbandry. WARDS wants the institutional animal to have the kind of care that would be given to him in a good veterinary hospital. At the University of Illinois 25 people handled these 336 dogs and nearly 10,000 more animals. If these top recipients of Federal funds are so understaffed and their quarters so meager what must be the conditions in the less fortunate places, financially?

Mr. ROBERTS. It would seem to me from all of the testimony we have had, even from some of the people who are against any legislation, not opposing the giving of adequate, clean, sanitary quarters for animals, we find the majority of people are in agreement. The quality of research work would certainly not be downgraded by assuring animals of at least a minimum degree of comfort, care, and proper food.

I think if we accomplish nothing else in this hearing but that one thing, we have gone quite a distance.

Mrs. DUNN. That is right.

Mr. ROBERTS. How we accomplish that remains to be seen but it would seem to me that even those who say that it would be so much redtape, we cannot do the work because of making out reports—I am not saying these people are insincere or that they are incorrect, necessarily—but I am trying to sit in the position of judge as to people's opinions and it would seem to me that certainly as far as adequacy of proper facilities is concerned, most everyone is in agreement these cruel and inhumane methods ought to be discarded.

Mrs. DUNN. Mr. Chairman, the difference between the WARDS program and other programs is that we would set up an agency that need not be a big one but one that instead of coming in and finding out that something is wrong, it would go in and find out how it could help the situation in the same way that an institute plans and provides for a program for heart, cancer, or for anything else. Testimony has shown there is plenty wrong but it will be corrected only by intelligent planning.

A number of medical witnesses asked for funds for animal care, but the way to really save funds would be to intelligently plan their expenditure in obtaining a high national standard of care. That is why the WARDS approach is different in that we are not an inspection agency alone but a cooperating and building agency.

Mr. ROBERTS. I think there are at least several programs that have worked well. I have not interfered with the right of local jurisdictions but have hoped instead that there would be a cooperative type of arrangement.

The President recently signed a bill that came from this Subcommittee on Migratory Workers. This goes into 30-some-odd States. They make very little in the way of money but yet there is a gathering of crops throughout the country with billions of dollars in crops in value involved.

We passed a bill which is going to cost the Federal Government very little and it provides a leadership in working with the local authorities. I think it is going to be a very fine program.

I think perhaps we might look at that same system in considering this legislation.

Thank you very much.

Are there any questions, Mr. Nelsen?

Mr. NELSEN. No.

Mr. ROBERTS. Is Dr. Rabstein here?

(No response.)

Mr. ROBERTS. Dr. Eugene Marshall Renkin, of the Physiology Department of George Washington University?

(No response.)

Mr. ROBERTS. Mr. Larry Andrews, branch director, National Anti-Vivisection Society, Occidental Building, Washington, D.C.?

STATEMENT OF LARRY ANDREWS, BRANCH DIRECTOR, NATIONAL ANTI-VIVISECTION SOCIETY

Mr. ANDREWS. Mr. Chairman and members of the committee, I am Larry Andrews, manager of the Washington branch of the National Anti-Vivisection Society, representing many thousands of members in every State in the Union; also representing the International Conference Against Vivisection, a federation of antivivisection societies.

My statement will be brief, for reasons I shall explain, but I desire to make it very clear that the organizations I represent are unalterably opposed to H.R. 1937 and H.R. 3556, popularly known as bills seeking to regulate vivisection, or animal experimentation. We oppose such legislation now and in the foreseeable future.

We antivivisectionists regard vivisection as a moral issue and have consistently opposed every proposal that has been made through the years seeking to modify the practice rather than its total abolition. No one ever has stated this opposition more clearly than the revered Henry Bergh, founder and president of the American Society for the Prevention of Cruelty to Animals. Permit me to quote one short paragraph from his address at the annual meeting of his society held in New York City in 1881, 5 years after the enactment of the British Anti-Cruelty Act of 1876. I quote:

> It has been suggested that it would be more wise to ask for a modification of vivisection, rather than its unqualified abolition. Vivisection, like murder or arson, is either right or wrong. If it is right to torture a sentient being to death, by all the means that science and art can devise, then it is wrong to restrict that right; if it be wrong, it follows that instantaneous and uncompromising finality should be insisted on.

Mr. Chairman, the National Anti-Vivisection Society wanted very much to present testimony to this committee when hearings were scheduled on these measures now before you, and we have diligently made this known. As recently as July 28, 1962, the Honorable Oren Harris, chairman of the full committee, assured us by telegram that we would be given ample notice when hearings would be scheduled.

The notice we received on Tuesday of this week did not give us that ample time to prepare the material we regard as vital for the committee's consideration of such an important, but complex problem, involving not only uncounted millions of animals, but every man, woman, and child in America, nor to bring to Washington experts in this field who could give testimony invaluable to this committee for its careful consideration.

It is not enough for us to tell you we are opposed to this legislation; you have every right to know why we are thoroughly convinced that this proposed legislation will perpetuate what we regard as an evil practice, instead of curing it. Certainly the fault is not ours that we are unable to place before you intelligent, well-informed witnesses. If we are at fault, it is because we relied on assurances that we would be given ample time to prepare for this hearing.

Mr. Chairman, I am attaching to this statement a copy of a letter sent to Senator Gordon Allott of Colorado, by the Reverend Robert A.

Russell, Denver, Colo., president of the National Anti-Vivisection Society.

Mr. ANDREWS. I would like to interpolate that this would have been his testimony had there been time to bring him here, and ask that this be included in the record for the information of the committee.

Thank you.

Mr. ROBERTS. Without objection.

(The letter referred to follows:)

OPEN LETTER OF REV. ROBERT A. RUSSELL, D.D., RECTOR, EPIPHANY EPISCOPAL CHURCH, DENVER, COLO.

MAY 15, 1962.

Senator GORDON ALLOTT,
Senate Office Building,
Washington, D.C.

MY DEAR SENATOR ALLOTT: In taking the position you have described to me in your letter of April 4, I sincerely believe that you are courageously and clear-sightedly protecting the interests of our country, and of every citizen in it. Burdened with taxes at home, facing from abroad a threat deadly and insidious beyond anything the world has ever known, every American owes a debt of gratitude to a leader like yourself, who can see through the apparently popular fad to the dangerous and wasteful core, and who has the courage to speak out plainly concerning what he sees.

Recently, from an unexpected source, additional confirmation has been given to a view for which only a few of us, up to now, have cried out in the wilderness. Enclosed is a copy of an editorial which has just appeared in the Journal of the American Medical Association. It questions the usefulness of the vast sums of money our Government is pouring into medical research, at least some of which it characterizes as "doubtful, artificially blownup, occasionally ridiculous * * *."

The truth has many aspects, as the elephant had for the wisemen in the poem. An animal used in medical research is, to us of the antivivisection movement, primarily a living thing capable of experiencing suffering. That same animal, in the same laboratory, is to all of us, as taxpayers, a source of very heavy expense. To the men of the American Medical Association, the presence of that animal in a reesarch laboratory implies a threat to the standard of care the American patient is getting from his doctor, because it symbolizes a diversion of money and facilities and manpower into questionable research. (It is chiefly this aspect of the problem against which the editorial in the AMA Journal speaks out.) To those who shape the destiny of the United States in its struggle against world communism, that animal is also a measure—a unit measure of the share of the total American effort, dollars and facilities and the time of critically needed specialists, going into an employment which must either strengthen our total position, or else, if wasted, weaken it in the face of the mounting attack by our enemies. Presently, it is reliably estimated that the research laboratories of this country hold 500 million such animals.

VIVISECTION IS SHAM SCIENCE

We antivivisectionists have always maintained that vivisection is bad morality. I do not think that morality, in our present struggle to win the minds of people all over the world, is an aspect of our way of life which we can, to put it very mildly, afford to ignore. But there is another aspect to this truth. We antivivisectionists have also, over the years, been of necessity the very persons to whom it has most shockingly been brought home that vivisection is actually a travesty on the name of science. Many very eminent scientists have agreed with us, and with us have been shouted down in the jostling for the research dollar. Now, the American Medical Association, the official, responsible, conservative representative of the rank and file of American medicine, has found it necessary to join its voice to those which protest, even though that protest must discountenance not a few of its own members. The AMA has gone to the extent of saying that medical research, on the lines and scale to which it is now subsidized by our Government, may represent a blight, may work to the detriment of the care sick persons receive. The AMA goes further, to question seriously the utility and worth of the results of such research.

Knowing that you have long and ably stood for the proposition that a dollar of our tax money wasted is in effect a dollar contributed to communism, I would like to take a little space, and a little of your time, to inform you of something we have come to know about animal research projects, simply from the point of view of their scientific worth, and to put forward a suggestion which I believe might interest you. I do not propose to take up your time by reiterating our main arguments, with which I know you are already familiar. What I propose to do here is talk about fundamental scientific principles, and about the economic principle of a dollar's worth of value in exchange for a dollar paid out.

A FALSE ANALOGY TO REAL SCIENCE

I respectfully suggest to you that the real cause of the current difficulty with medical research stems from a false analogy between the physical sciences and the biosciences. Our Government has, over the years, acquired experience in allocating funds effectively and fostering useful research in the former; it was only natural that with the rapid rise of the latter (which are still very new), the same procedures should have been adopted. But it is my purpose to demonstrate here that the present procedures for allocating funds for medical research have not yet been adapted to reality or logic, on the basis of pragmatic tests which our democratic form of government has always demanded in spending the taxpayer's money.

I say that there has been a false analogy drawn between the physical sciences and the so-called life sciences, to the extent that methods proven in one area have been uncritically applied in the other. Let me demonstrate what I mean, and at the same time illustrate our reasoning in asserting that live animal experimentation is inevitably sloppy science.

TRUE SCIENCE GIVES WORKABLE RESULTS

For a physicist or a chemist, there is a sufficient body of experience accumulated, and a sufficiently tested general theory, to make it safe to assume that one atom of, say, copper is just like (for all practical purposes) another atom of copper. There is sufficient experimental evidence already accumulated to justify, even, the extrapolation of some results gained from experiments on copper to applications involving, for example, silver, or in some cases even plutonium, or perhaps generally all metals. The laws involved, however, are statistical laws. They speak in terms of probabilities, ranging in value from 1.00 (certainty) to 0.00 (impossibility) as limits. In practice, these limits are, of course, never attained, even in the most precise experiments. The scientist, always and forever, because the reasoning of science is inescapably inductive in nature, must deal with probability values. This fact has, through the writings of scientists, become familiar to all of us. Almost as familiar to the man in the street is the idea that, for a statistical generalization to represent a scientific truth, a sufficient number of cases must be examined to give validity to the probability values. The statisticians and mathematicians have, as you know, worked this out quantitatively, and have arrived at definite calculations by which it is possible to find out the minimum size for a significant sample, the least number of individual cases from which, in given circumstances, it is safe to generalize. Naturally, the greater the number of cases tested, up to a point, the safer is the inference to be drawn from them. But below a certain number of cases (the significance sample), it is not safe or valid to draw any inference. To reason from too few cases is to fall into the same error which has given the world such superstitions as that about the ill luck derived from a black cat, or breaking a mirror. Given certain data, the actual numerical size of the significant sample can be computed, in true sciences, before the experiment is conducted.

EVEN AMA RAISES DOUBT ABOUT EXPERIMENTS

Now, research animals are infinitely larger than atoms (and infinitely more expensive to keep about). They are also infinitely more various. Standard strains of mice have been developed, but they are standard only with respect to a few very limited parameters. Even the famous fruit flies of the geneticists (*Drosophila melanogaster*) are not perfectly standard. There is no really standard animal, no standard experimental dog, or cat, or monkey, or guinea pig. Every animal differs from every other. And every animal, naturally, differs according to external conditions, from one day to the next. What is shockingly

true is that, in our entire survey of the scientific literature, we have not found to exist any theoretical basis for finding out what constitutes, in a statisician's sense, a significant sample for purposes of planning or evaluating an experiment on any living animal.

The implications of this apparently prosaic fact are hair raising. It means that the results of experiments on animals are of an entirely different, and much lower, order of accuracy from the results of other sorts of experiments. The difference can be compared to putting money in Government bonds, as against gambling it at the races. It is, in fact, worse than that. At the races, we are at least quoted odds against a given horse, a rough probability value. But in the animal experiment, where no one knows, no one has discovered, whether a significant sample will be used, or what constitutes a significant sample, the probability value of any results obtained does not even exist. It is not defined. The experimenter does not know, literally, the degree of uncertainty involved in assigning the degree of uncertainty of his results. It is not just a case of the odds being so many to one against his being sure. He does not know, and cannot find out, what the odds are. He is a man betting in the dark, against unknown odds, by some homemade rule of thumb. It is not surprising, therefore, that the AMA questions whether much of value, in proportion to the cost, can come from his work. But his expenditures consist of dollars just as real, and just as valuable, as those that go into atomic submarines or radar warning nets.

CHECKUP ON VIVISECTION GRANTS NEEDED

Let us take an actual case, to make this point concrete. For example, in the experiment to find out what factors influence a monkey to care for its mother, the ultimate purpose must be to find out something about the motivations or behavior of human beings, if the experiment is to have any utility for us. Hence, the chain of reasoning underlying the experiment must run:

(1) What is true of certain monkeys here in this laboratory is true of all monkeys.

(2) What is true of all monkeys is, to some extent, true of all mammals, for monkeys are mammals.

(3) What is true of mammals in general is true of men, for men are mammals.

Now, right at step (1), this reasoning hits a snag, for the question, "How many monkeys must be tested here in this laboratory before we can say, with reasonable certainty, that the results are likely to be true of any monkey outside this laboratory?" has no answer, so far as the present scientific literature is concerned. Much less is the answer defined to the question of how many monkeys must be tested, with what uniformity of result, before the probability can be ascertained that the results will be true of mammals in general, or of men in particular.

If a physicist finds that samples of supercooled boron have certain electrical properties, he is justified in publishing his results in terms of boron in general, or possibly even in terms of the cryogenic properties of certain groups of elements. But the only valid information our monkey researcher can possibly have, by the very standards of science itself, refers only to specific monkeys in his laboratory, and not even to those as they exist now, but only as they existed when the experiments were performed. This is no mere verbal objection, no empty technicality. It has to do with the same sort of practical problem as the question of the investment of money in blue-chip securities, as against a wildcat uranium mining stock. Again, statistically based inference is the only guide we have, and the key to reliable use of such inference is a certain minimum amount of information, of experience, of standards to go by.

Now, these facts are true of research on living animals, as they are true of no other field even loosely termed scientific. The results of animal experimentation are of an entirely different order of accuracy from those of the body of scientific findings—a lower order. (Of course, this is not true of the results of work in microbiology or biochemistry, which are not faced with the same problem, and in which progress has been steady and fruitful.) The animal experiments have not, and cannot have, the same order of reliability, or the same value from the point of view of prediction, as orthodox scientific studies. It is in the light of this indisputable difference that I venture to suggest to you that, quite apart from a possible investigation of all types of research appropriations by your committee, which you mention in your letter, some sort of permanent check and balance might justifiably be set on the appropriation of tax money for such animal research projects.

TAX MONEY WASTED ON VIVISECTION CAN BE SAVED

In physics, in chemistry, even in such relatively new fields as the design of atomic reactors, the sciences involved have standards and backgrounds of sufficient precision so that there can be no criticism, perhaps, of scientists passing on the question of what it may be worthwhile for other scientists, their friends and associates, to investigate at Government cost. But in the field of animal experimentation, it is in sober truth, as I have just pointed out, and with no desire or need to speak metaphorically, a case of the blind leading the blind. The procedure at present, as you of course know, is for employees of the National Institutes of Health, themselves researchers in the same field, accustomed by usage and by training to working without precise statistical criteria, to process the application for Government research funds, and make recommendations to the Secretary of Health, Education, and Welfare, who in turn makes a recommendation to the Congress for appropriations, lumping together vast numbers of recommended projects, for a whole year, all at one time.

What I am venturing to suggest is that, since in all likelihood Congress, and even your committee, cannot within the inescapable limitations of time study each such proposal in detail, some sort of permanent board of review, made up of hardheaded practical men with business experience, who know the worth of a dollar, and the gravity of the Nation's other needs, mediate between the speculative researchers and the necessary haste of Congress to get its business accomplished in the national interest. For these are, by their very nature, questions on which not researchers, but practical businessmen, bankers and manufacturers, are the true experts. The businessmen are the ones who are used to judging whether a particular speculation is within the realm of worthwhile risk. They understand the value of progress, of new discovery, of innovation and research, and at the same time have the mature judgment to sort out the purely visionary and theoretical, which may appeal to a particular researcher, from the schemes which hold at least a reasonable hope of true worth to the country at large, which must foot the bill. Such men are not overawed by risk, nor are they ignorant or unable to understand the general trend of scientific reasoning. (If they were, most of American technological progress would still be in the form of rough notes in the pocket of some unsung theoretician.) Nor would such a group of businessmen feel the same pressures and embarrassments as must be common to those from the same field, and possibly the same academic community, in having to pass on the applications of their friends, former teachers, or past or future superiors.

HUGE COMPUTER USED TO TOTAL COST OF RESEARCH

I am, after all, only suggesting that, absent and reliable scientific basis for evaluating in advance certain types of experiment, because of lack of general development of the field, the best test which can be applied to it is sound and seasoned business judgment, rather than impetuosity to invade the unknown, however scientifically motivated. In actual practice, I am sure that a permanent board of business-trained reviewers would have wanted to know a great deal more about the aims, the basis, and the probable utility, of the monkey-and-its-mother experiments than we have yet heard. Yet, once such a project gains initial momentum, it is apparent that it has a tendency to continue and to grow in cost and magnitude, from year to year. Surely, sound business judgment cannot be an unreasonable basis for safeguarding the taxpayer's dollar, and the Nation's critical ability to resist aggression.

Already, I have been informed, some proposals for remedial action in this truly alarming state of affairs have been put forward. For example, I understand that Representative George Meader of Michigan has introduced into the House of Representatives a bill which calls for a commission to study the entire field of federally supported scientific research, in much the same manner as that in which the Hoover Commission reviewed other areas of governmental spending. There can be no doubt, of course, that in view of the vast amounts of money involved, a careful, business-oriented appraisal of the situation can only benefit us. However, with all respect to Representative Meader, it would appear to me that a commission which comes in, makes a survey and recommendations, and then goes home, has helped matters only for the time being. I most respectfully suggest to you, sir, that, especially in the area we are now discussing, with its demonstrated low order of scientific reliability, what is needed once will continue to be needed. We do not simply need an existing

mess cleaned up; we need, and can show the need, for some permanent machinery to prevent the mess from recurring time and again. We need a permanent safeguard from a source of unnecessary expense which has been demonstrated to occur for specific reasons, and which must then tend to recur so long as those reasons exist, and so long as nothing is done to prevent it. Hence, I fully agree with Representative Meader, that sound commonsense and the interest of our country demand action; however, I simply do not agree, with special reference to the field of animal experimentation, which has been shown to have a special weakness in this direction as evidenced by the example of the monkey experiments and others, that a correction of what is past will, without more, correct the future. It seems to me that this is evident enough, simply from the fact that, in response to the inquiries of Senator Byrd, Representative Harris, and others, on the subject of the monkey experiments, the Department of Health, Education, and Welfare defended and praised the project, and indicated that it fully approved the plan to spend hundreds of thousands of dollars, over a period of years, on further research into the affectional relationships of the monkey and its mother. I therefore ask you, as my Senator, whether I and the other taxpayers of this country cannot have some permanent form of protection from this, and all similar, forms of costly nonsense, masquerading as valid scientific research.

Nor do I believe that I am, in making this suggestion, myself guilty of advocating a very large expenditure, for the machinery already exists to make such a procedure practical and not too costly. The Smithsonian Institution, on behalf of the Government, already collects and collates data on every medical research experiment carried out in this country, and many foreign countries, under the auspices of any recognized institution of learning. (As a matter of fact, of late years the Smithsonian has employed a modern, large, high-speed computer to help it to handle this enormous task. It gives me, at least, some realization of the vastness of the expenditure with which we are dealing, when I think that with every click of that huge machine, whose cycling time is measured in microseconds, information is being added about some project whose cost cannot be less, in dollars, than four significant figures, and may run to five, or six, or seven zeros after the dollar sign and before the decimal point. Yet, I am told that the machine works full time on this project of cataloging medical research projects.)

SUGGESTION COULD SAVE MILLIONS OF ANIMALS

With such facilities already in existence, surely only a fraction of the potential savings to the taxpayer would cover the cost of such a review board as I have ventured to suggest. The saving in the health of the American people (to take the suggestion of the American Medical Association), the saving in time which could be devoted to work crucial to the national defense, and, not the least concern to me, the saving of perhaps millions of animals who suffer to no real purpose whatsoever, would be an additional benefit whose value cannot even be guessed at.

May I say in closing that while my aim has been to be impartially and genuinely helpful to you, without respect to my own most immediate concerns, yet I hope that such a procedure as that suggested would, in its very nature, bring with it the added blessing of at least some rethinking of the question of the basic morality involved in animal experimentation in general. I pray that it may be so, both as a citizen of the United States and as a person long concerned with the specific issue of whether blessings can come from the sufferings imposed on God's other creatures, however humble.

Faithfully yours,

ROBERT A. RUSSELL,
President, the National Anti-Vivisection Society.

Mr. ROBERTS. Mr. Andrews, I appreciate your feeling and the fact that you are not alone in that you did not have sufficient time to bring other witnesses. I recognize the importance of this hearing but I might tell you that this hearing has not been an easy one to arrange.

Mr. ANDREWS. We understand that and we understand the pressure on Congress.

Mr. ROBERTS. Not only the pressure on the Congress but the pressure on the chairman of this subcommittee, because we have had a very busy schedule this year.

I might even say that some of my colleagues debated the advisability of having any hearings this year because we are right up against a deadline. However, we felt that even a hearing on short notice was better than no hearing at all because so many people throughout the country on all sides of this problem wanted to be heard.

I share your feeling that not only your people but people who regard this as you do, and everyone connected with this problem, have had insufficient time. It just happens that is the boat we are in, but I wanted you to know we are all in the same boat.

Mr. ANDREWS. That is right. We understand that and thank you.

Mr. ROBERTS. Thank you.

Mr. ROBERTS. Mr. H. Stanley Bennett, dean, College of Medicine, University of Chicago?

(No response.)

Mr. ROBERTS. I might say that when I call the names of any of these witnesses, if there are others here who know of witnesses' names I am calling, I will leave the record open as long as necessary so that additional statements can be filed.

Mr. Hiden T. Cox, executive director, American Institute of Biological Sciences?

(No response.)

Mr. ROBERTS. Mrs. Frances Holway.

You may proceed, Mrs. Holway.

STATEMENT OF MRS. FRANCES HOLWAY, ANIMAL CARE PANEL

Mrs. HOLWAY. My name is Frances Holway. I am a member of most of our national humane societies and also a member of the Animal Care Panel. This may sound as if I am carrying water on two shoulders but actually I am not, for I have long been dedicated to finding the right solution to the problem of humane research and I believe the right solution must take into full consideration both the humane and scientific points of view.

I might insert here in my remarks that, had I heard Dr. Erps' testimony yesterday, I would perhaps have written this paper in a little different manner.

However, I shall proceed with it as it was prepared.

In my search for the answer I have visited about 20 of our biggest and best laboratories and several which are not our best. Both there and through the Animal Care Panel I have met many researchers and have tried to understand their points of view. Their work is infinitely more complex than most laymen can appreciate. As was brought out in the matter of the Blalock press, there is usually a reason for everything they do whether the rest of us agree that it is a sufficiently important reason or not. I personally think some research is shoddy or insignificant, but have found that most doctors I have known are sincerely dedicated to the relief of human suffering. Although much of the testimony given here has necessarily dealt with laboratory horrors, I assure you that all experimenters are not devils with horns on. Don't misunderstand me, however. I am not belittling these testimonies. Unfortunately such atrocities as the witnesses have described are not isolated instances but illustrate conditions that are all too common. But there is also an abundance of painless research carried on by people who try to be reasonably humane.

Now I would have great respect for these good experimenters except for one thing: all the good experimenters know all about the painful experiments, and though they would not commit such painful acts themselves they do little or nothing to stop such malpractices among their confreres. But at least once they almost did take such a step. Shortly before the first regulatory bill was introduced into Congress the Animal Care Panel set up a committee which some of us hoped might obviate the necessity for regulatory legislation. It was called the Committee on Ethical Considerations in the Use of Laboratory Animals. Dr. Bennett Cohen, who addressed you yesterday, was then president of the Animal Care Panel, and did me the very great honor of asking me to serve on the committee as a representative of the humane interests. At the time I sincerely believed, and I think Dr. Cohen did, too, that reform could come from within reasonably soon, and I was tremendously heartened that the doctors were ready to take such action. The letter of invitation from Dr. Cohen made it clear that we were to be concerned with the problems of humane (or inhumane) research.

However, almost from the minute the committee was appointed, pressure seemed to come from all sides to steer us clear of any consideration involving painful experimentation, but to confine ourselves to matters of animal husbandry. Well, to make a long story short, that committee was finally transmuted into the Animal Facilities Standards Committee which Dr. Cohen has described to you. It is now only concerned with matters of equipment, personnel, laboratory management, et cetera, very similar to Dr. Thorp's committee in the National Research Council. In the last draft I saw of things under consideration there was no mention of suffering though a question on exercise areas was included as were questions of heat and ventilation. But many other considerations had entered the picture such as public relations, a dressing room for employees, et cetera.

For a year I did my best to keep ethical considerations before the committee but I stood alone and finally resigned. For I could not always agree with the committee even on matters of facilities. For example, one general practice that humane societies have always decried is keeping large animals in small cages, for months or even for years on end. Most doctors claim it is a lack of funds that make this crowding necessary. Nonsense! One small stainless steel cage of the type currently vogue may cost $1,300 or even more. I repeat, $1,300 for just one of these cages! The animals are miserable in them. But my colleagues on the committee seemed to think they were tops in facilities sophistication. On the other hand, at the Naval Research Center in Bethesda and at the Jackson Memorial Laboratories in Bar Harbor I have seen very happy dogs living and playing together in large pens which were very cheaply constructed. These animals were, to my mind, ideally housed and cared for, but most researchers look upon such cheap quarters as hopelessly primitive. Yet even if we could agree on such things, and even if the animals liked the standards we might set up, these standards would be only recommendations. There is no compulsion whatever that laboratories accept them. Nor would the profession tolerate any compulsion.

As a result of my efforts on this committee I have been convinced of one thing. There are good men doing research, men who are humane and who try to keep their animals from suffering. But there is a rigorous code among these researchers, a code that keeps them from lifting one finger against practices which they themselves would not employ. The code dictates that anything done in the name of sacrosanct science must have complete immunity from considerations of social responsibility. Science must be free to transcend all principles of decency, society, religion or government. Well, that obviously is an exaggerated statement, all doctors have ethics regarding their human patients, but in the laboratories scientists are determined to resist such encroachments on their freedom insofar as they possibly can.

You have heard that code expressed over and over in this room. Researchers must have freedom, freedom, freedom. Yet even if we were willing to grant science freedom from all moral restraints would science really benefit from this freedom? The 1960 edition of the Encyclopedia Britannica printed proof that it would not. We have heard a lot about the English law but England is not the only country to have such a so-called "no pain" regulation. Four other countries, Norway, Sweden, Switzerland, and Denmark, have similar regulations. The encyclopedia took the population of these and all other countries doing biological research and divided the population of each country by the number of Nobel prizes in such research awarded to the citizens of each country. On this proportioned basis who got the greatest number of awards? The five countries having "no pain" laws. They all outstripped America. Apparently, by having to eliminate pain they were forced to do more careful research on better cared for animals and thus improved their scientific findings. Believe me, ethical considerations do pay off.

Several medical researchers appeared before you yesterday to talk about the bill. Some of the objections were obviously absurd. Since these laws would apply only to people receiving Federal grants no fisherman will be prevented from putting two worms on a hook. But most of the objections were based on valid grounds and should receive very thoughtful consideration from your committee. Neither of these bills is necessarily perfect and could be improved by laboratory experts. But did you notice that with all the criticism not one constructive suggestion was made by the dissenters? The code prohibits professional men even from approving the intent of the bills. Two years ago at the annual meeting of the Animal Care Panel I asked if the legal committee would not cooperate in drafting a bill that might be acceptable to the profession, one that would enforce their own professed standards. But I was given the unequivocal answer that the ACP would not cooperate in any way to draft any regulatory legislation. We need the help of these professionals but against such an attitude how are we going to get it?

We may not be able to write a perfect bill until we get the best scientific cooperation but a bill we must have even if it is amended later. And I still think that even now if a few professional researchers who sincerely want their profession to maintain humane standards should volunteer to sit down with your committee and the humane societies, details could be worked out that would permit the greatest possible

freedom compatible with ethical responsibility. But if the medical profession will not cooperate in this venture then the bill must be written as well as possible by nonmedical people. For even if the professionals could and would apply the "sanctions of their peers" to unscrupulous laboratories, there is always a hard core of people in any walk of life who will not respond to such sanctions. That is why every law in the country had to be enacted. The time has come when the Government must let the scientists know that even sacrosanct science is not above the law, and that those who operate on animals, like every other person in every walk of life, must be held legally responsible for their immoral actions.

Thank you very much for your very courteous attention.

Mr. ROBERTS. Thank you Mrs. Holway.

I have tried to follow your statement and I think it is very well done. It is a very reasonable statement and I think it points out some of the problems we are faced with.

I was impressed by the fact you point out some of the opposition to any type of legislation would not cooperate in the drafting of a bill that might be acceptable to such people.

You do render a real service in having the experience you have and having been a member of the ACP, and I am gratified to see what I think is a constructive attitude toward this legislation.

Some of these gentlemen may have a question.

Mr. NELSEN. No questions.

Mr. ROBERTS. If not, thank you again.

Mrs. Christine Miller, assistant to the president, National Health Federation?

I am told there would be a statement sent in.

(The statement referred to was not received.)

Mr. ROBERTS. Is Dr. Walter Hess here, associate dean, College of Medicine and Dentistry, Georgetown University?

(No response.)

Is Mr. Hugh Hussey, dean, College of Medicine, Georgetown University?

(No response.)

Are there others whose names have been misplaced or who did not get on the witness list and who are here to testify?

The Chair will leave the record open for a period of 10 legislative days for the filing of statements.

Before concluding the hearing, I have a number of statements for the record that have been handed to me.

The first is a resolution from the New England Federation of Humane Societies, dated May 22, 1962, signed by Miss Ruth A. Ballou; a resolution from the Atlanta Humane Society, dated September 12, 1962, signed by Miss Judy King, president. I should add that these are in favor of these bills.

A resolution by the county of Montgomery, Ala., Montgomery Humane Society, signed by Marie D. Crosland, in favor of the bill; a resolution by the St. Augustine Humane Society, St. Augustine, Fla., dated August 24, 1962, signed by Margaret H. Nemo; a letter from All Souls Business and Professional Women, dated September 23, 1962, signed by Lee T. Dixon, president, Business and Professional Women,

All Souls Unitarian Church, in favor of the legislation; a resolution by the Ontario County Society for the Prevention of Cruelty to Animals, Inc., in favor of the legislation, and signed by Catharine B. Mellen, secretary, dated July 19, 1962; a resolution by the Sparks Humane Society, dated July 16, 1962, signed by Art Riggle, president; a resolution from the Paramus Animal Welfare Society, in favor of the bill. I assume it is in New York but it does not state.

A resolution from the Columbia County Humane Society in Portage, Wis., dated February 9, 1962, signed by Mrs. E. P. Andrews, secretary, in favor of the bill; a resolution from the Michigan City Humane Society, Michigan City, Ind., dated June 17, 1961, signed by Mr. Smotzer; a resolution from the Humane Society of Washtenaw County, dated August 7, 1962, Ann Arbor, Mich., in favor of the bill; a wire from the Reverend Eugene Dinsmore Dolloff, dated September 25, 1962; a letter from Charles N. Breed, Jr., M.D., dated September 25, 1962, New York City, in favor of the legislation; a letter from Dr. Frank E. Adair, dated September 25, 1962, in favor of the legislation.

(The papers referred to follow:)

NEW ENGLAND FEDERATION OF HUMANE SOCIETIES,
Boston, Mass., May 22, 1962.

MRS. ESTELLA DRAPER,
Executive Secretary, Animal Welfare Institute,
New York, N.Y.

DEAR MRS. DRAPER: As requested by you, a copy of the resolution passed on May 4, 1962, by the New England Federation of Humane Societies in annual meeting assembled is as follows:

"*Resolved*, That the New England Federation of Humane Societies go on record as favoring the passage of H.R. 1937, authored by U.S. Representative Martha Griffiths, providing for the proper treatment of animals used in experimentation, and the federation further urges its members to write to their individual congressional Representatives requesting favorable consideration of this legislation.

Sincerely yours,

MISS RUTH A. BALLON,
Retiring Secretary.

ATLANTA HUMANE SOCIETY,
Atlanta, Ga., September 12, 1962.

MRS. CHRISTINE STEVENS,
President, Animal Welfare Institute,
New York, N.Y.

DEAR MRS. STEVENS: At our board of directors meeting on September 11, the following resolution was adopted by a unanimous vote:

"*Resolved*, That the Atlanta Humane Society to go on record as favoring the passage of H.R. 1937, authored by U.S. Representative Martha Griffiths, providing for the proper treatment of animals used in experimentation, and the society further urges its members to write to their congressional Representatives requesting favorable consideration of this legislation."

We plan to urge our members to write to their Congressman and urge the passage of the bill.

We earnestly hope that the combined efforts of the various societies will be successful.

Sincerely,

MISS JUDY KING,
President, Atlanta Humane Society.

RESOLUTION

Whereas S. 3088 and H.R. 1937 are identical bills now pending in the Senate and House of Representatives of the United States; and

Whereas these bills, if passed, will not prevent or impede experimentation on animals for scientific reasons, but will prevent suffering over a long period of time which amounts to prolonged torture; and

Whereas, it is the unanimous opinion of the board of directors of the Montgomery Humane Society that one of these bills should be passed: Now, therefore be it

Resolved, by the Board of Directors of the Montgomery Humane Society, That said board go on record as being unanimously in favor of the adoption of either S. 3088 or H.R. 1937; and be it further

Resolved, That the Members of Congress in both the Senate and the House of Representatives be urged to use their influence in the passage of said bills.

STATE OF ALABAMA,
County of Montgomery:

I, Marie D. Crosland, president of the Montgomery Humane Society, Inc., do hereby certify that the above resolution was unanimoulsy passed by the board of directors of the Montgomery Humane Society, Inc., at a board meeting, September 5, 1962.

MARIE D. CROSLAND,
President, Montgomery Humane Society, Inc.

ST. AUGUSTINE HUMANE SOCIETY,
St. Augustine, Fla., August 24, 1962.

SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION,
New York, N.Y.

RESOLUTION

Whereas the officers and directors of the St. Augustine Humane Society, of St. Augustine, Fla., wish to go on record as approving immediate, mandatory legislation for the humane treatment of experimental animals used in laboratories; and

Whereas two identical bills, H.R. 1937 and S. 3088 will serve to this end if hearings can be scheduled before Congress adjourns: Now, therefore, be it

Resolved, That the legislation chairman of the St. Augustine Society write the necessary letters urging prompt, favorable action to the Florida Representative and the two Florida Senators, asking their unqualified support in getting scheduled hearings on H.R. 1937 and S. 3088 before the adjournment of Congress; and be it further

Resolved, That a copy of this resolution be sent to the secretary of the Animal Protective Legislation Society, 745 Fifth Avenue, New York, N.Y., and another copy to the local press.

MARGARET H. NEMO,
Mrs. Ralph Nemo,
Legislation Chairman, St. Augustine Humane Society.

ALL SOULS BUSINESS & PROFESSIONAL WOMEN,
New York, N.Y., September 25, 1962.

Re H.R. 1937.

Hon. KENNETH ROBERTS,
Chairman, Subcommittee on Health and Safety, House Committee on Interstate and Foreign Commerce, House Office Building, Washington, D.C.

DEAR MR. ROBERTS: The Business & Professional Women of All Souls Church want to go on record as being unanimously in favor of the above bill which provides for humane treatment of animals used for laboratory experimentation.

I, personally, have worked in the cancer field for 24 years, and am fully aware of the valuable contributions which have been made to medicine through animal experimentation. But too many experimenters are utterly indifferent to the needless suffering they inflict upon their mute and helpless subjects, and make no effort to provide any decent care for them, leaving them wretchedly caged and starving.

This legislation is sorely needed and long overdue, and we hope you make every effort to speed the enactment of this bill into law.

Sincerely yours,

LEE T. DIXON,
President, Business & Professional Women,
All Souls Unitarian Church.

ONTARIO COUNTY SOCIETY
FOR THE PREVENTION OF CRUELTY TO ANIMALS, INC.,
Geneva, N.Y., July 19, 1962.

Copy of resolution passed by the board of directors of the Ontario County SPCA, Inc., at their regular meeting held in Canandaigua, N.Y., on January 16, 1961

"*Resolved*, That this society approves and supports the bill which provides for the supervision of vivisection as embodied in H.R. 1937 (also referred to as the Cooper bill) ; and be it further

"*Resolved*, That the secretary of this society convey this information to the Honorable Oren Harris, of the House of Representatives, and urge that hearings be held on this bill as soon as possible."

CATHARINE B. MELLEN, *Secretary.*

SPARKS HUMANE SOCIETY,
July 16, 1962.

Resolved, That the Sparks Humane Society, of Sparks, Nev., go on record as favoring the passage of H.R. 1937, authorized by U.S. Representative Martha Griffiths, providing for the proper treatment of animals used in experimentation and the society further urges its members to write to their individual congressional Representatives requesting favorable consideration of this legislation.

ART RIGGLE, *President.*

RESOLUTION OF PARAMUS ANIMAL WELFARE SOCIETY

Whereas the Paramus Animal Welfare Society was founded to encourage the education of the people of the borough of Paramus and the public generally in the humane care of dogs and other animals, to serve animal welfare, to help find them homes when necessary, and to combat any activities which may be detrimental to the welfare or humane treatment of dogs, cats, and other animals; and

Whereas the members of the Paramus Animal Welfare Society finds the bill H.R. 1937, sponsored by the Honorable Martha Griffiths on the human treatment of experimental animals or animals used for experimental purposes by research laboratories, necessary to the protection and furtherance of humane care of such animals ; Now, therefore,

The members of said Paramus Animal Welfare Society proclaim their complete support and agreement with said bill, H.R. 1937, and its prompt enactment into law by the Government of the United States of America.

Respectfully submitted.

E. C. LINDENMEYER, *Recording Secretary.*

COLUMBIA COUNTY HUMANE SOCIETY,
Portage, Wis., February 9, 1962.

Mrs. CHRISTINE STEVENS,
New York 22, N.Y.:

The Columbia County Humane Society unanimously has passed a resolution urging the passage of bill H.R. 1937.

Mrs. E. P. ANDREWS,
Secretary, Columbia County Humane Society.

MICHIGAN CITY HUMANE SOCIETY,
Michigan City, Ind., June 17, 1961.

SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION,
New York, N.Y.
(Attention of Christine Stevens, secretary-treasurer).

GENTLEMEN: As per your letter of May 23, 1961, I send you herewith a resolution from the Michigan City Humane Society, as you requested, namely, that H.R. 1937 be favorably acted upon by the Congress of the United States.

Most sincerely yours,

WALTER SMOTZER, *President.*

P.S.—I am leaving it up to you to forward this resolution to the proper people in Congress. You may make as many copies of it as you deem necessary.

Our Congressman is John Brademas, third district, Indiana.

Our Senators are Homer E. Capehart and Vance Hartke.

RESOLUTION

JUNE 17, 1961.

Whereas the Humane Society of Michigan City, Inc., was formed and now exists to aid in the prevention of cruelty to animals; and

Whereas there now are animals being used in institutions wholly or partly supported by taxpayers' money, which animals are being experimented upon by incompetent persons and in cruel ways and that these animals thereby suffer; and

Whereas there has been introduced into the Congress of the United States a bill known as H.R. 1937 by the Honorable Martha Griffiths, which bill is designed to prevent the above-described cruelty: Now, therefore, be it

Resolved by the Board of Directors of the Humane Society of Michigan City, Inc., That this organization favor the passage of this bill, known as H.R. 1937.

WALTER SMOTZER, *President.*

Attest:

MARGARET BROWN, *Secretary.*

RESOLUTION OF HUMANE SOCIETY OF WASHTENAW COUNTY

ANN ARBOR, MICH., *August 7, 1962.*

Resolved That the Board of Directors of the Humane Society of Washtenaw County urges prompt, favorable action on H.R. 1937 for the humane treatment of experimental animals, introduced by Representative Martha Griffiths, and its companion bill, S. 3088, introduced by Senator Joseph S. Clark.

NEW BEDFORD, MASS., *September 25, 1962.*

ANIMAL WELFARE INSTITUTE,
New York, N.Y.:

My sharpest opposition to every needless act of suffering for dumb animals in scientific research. Only pressure of duties prevents my personal appearance to this end at the hearing in Washington.

REV. EUGENE DINSMORE DOLLOFF.

NEW YORK, N.Y., *September 25, 1962.*

Hon. KENNETH ROBERTS,
Chairman, Subcommittee on Health and Safety, House Committee on Interstate and Foregin Commerce, House Office Building, Washington, D.C.

DEAR CONGRESSMAN ROBERTS: I wish to express strong support for H.R. 1937 for the humane treatment of experimental animals. I believe these animals need and deserve protection by law.

Some animal research is, of course, most essential. Experimental dog surgery by medical students is absolutely needless. Furthermore, in many of our outstanding teaching medical centers, there are so many surgeons who are doing experimental animal surgery more to keep the surgeons busy than to accomplish anything of value. This is a disgrace. Repeating already proved sound surgical procedures is only a form of sadism on the surgeon's part.

As things stand, without legislation, there is no effective means of preventing cruelty to them. H.R. 1937 would, in my opinion, reduce suffering in laboratories without hindering sound research using animals. I hope you will do your utmost to see that this bill is enacted into law at the earliest possible time.

Very truly yours,

CHARLES N. BREED, Jr., M.D.

NEW YORK, N.Y., *September 25, 1962.*

Re H.R. 1937.

Hon. KENNETH ROBERTS,
Chairman, Subcommitte on Health and Safety, House Committee on Interstate and Foreign Commerce, House Office Building, Washington, D.C.

DEAR MR. ROBERTS: I am writing in support of the above bill which provides for humane treatment of experimental laboratory animals.

I am a practicing surgeon, specializing in the field of breast cancer, and am keenly interested in cancer research. Through my Adair Fund for Cancer Research, I support the work of various cancer experimenters, including the Roscoe B. Jackson Laboratory in Bar Harbor, Maine, of which I am past president and honorary chairman of the board. I was for many years a member of the National Advisory Cancer Council, and was instrumental in organizing cancer teaching programs in our medical schools.

It is obvious that I am not opposed to animal experimentation, but only to the needless suffering to which these animals are subjected, and the atrocious conditions under which these poor creatures are kept by certain experimenters. I do not see how this bill would in any way hamper or handicap scientific research. Sir Arthur Porritt, president of the Royal College of Surgeons of England, commenting on the British Act of 1876, states: "I think all of us have found the Home Office inspectors not only courteous but helpful, and we feel that the regulations have, in fact, been an advantage as the antivivisectionist does not get the support of the majority of the people. * * * I think it would be right to say that we feel it is essential to insure humane consideration for laboratory animals and that this is better achieved under some authority than if left to the individual."

I earnestly ask that you do everything in your power to get this much-needed bill speedily enacted into law.

Yours very truly,

FRANK E. ADAIR, M.D.

Mr. ROBERTS. There are many other resolutions which I will have to go over with the staff for the record because we are going to have a voluminous record.

Mr. ROGERS of Florida. Mr. Chairman?

Mr. ROBERTS. Yes.

Mr. ROGERS of Florida. Mr. Chairman, I would like to submit a statement for the record unless it has already been submitted.

This is a statement of Mabel E. Crafts, chairman of the Animal Welfare Committee of the Florida Federation of Humane Societies.

Mr. ROBERTS. Without objection.

(The statement referred to follows:)

STATEMENT OF MABEL E. CRAFTS, CHAIRMAN OF THE ANIMAL WELFARE COMMITTEE OF THE FLORIDA FEDERATION OF HUMANE SOCIETIES

The Animal Welfare Committee of the Florida Federation of Humane Societies was organized in 1954. As chairman of this committee since its organization, I have become familiar with numerous situations involving the care, use, and housing of laboratory animals.

We herewith offer several examples of firsthand experiences which definitely point to the need for legislation setting up mandatory standards for the humane treatment of laboratory animals.

EXAMPLE 1. SITUATION AT A LOCAL TEACHING HOSPITAL

This institution undertook to do some heart research. The animal quarters used were visited by committee members following complaints by other hospital personnel and citizens who had become aware of the conditions under which the animals were kept.

Findings

The dogs were housed in an old one-car garage. Ventilation was obtained through the garage door and a small single door. When these were closed there was no light or ventilation. The garage was cold in winter and hot in summer. Badly worn cages, discarded by a local veterinarian held the dogs. Some were too small so that a large dog could not stand at full height. The cages were filthy; feces and vomit from the sick dogs littered the floor of the cages. One cage was bordered with moldy bread which the dog would not eat. On the door of the cage was a sign "no meat." Convalescent dogs lay in these filthy cages. There was no attendant on hand and no one appeared during the visit. It developed that care of these dogs was incidental to the janitor work of one of the cleaners. An operating tray stood in the middle of this small room with surgical apparatus nearby indicating that the surgery took place within sight and smell of dogs. The findings were presented to the hospital administrator and the chief pathologist who was called in by the administrator. The latter, a very humane man, welcomed the formal complaint for he had been trying to improve conditions. He stated that he felt, "If the humane society knew about the conditions under which these dogs were used, they would close us up in a minute." It was explained that Florida laws expressly exempt animals used for medical research from any legal protection; that the welfare of these animals is entirely dependent upon the consciences of the people who use them.

Following this adverse report, made to the hospital board by the pathologist, this board had plans prepared for a new and properly planned laboratory that would also house dogs comfortably and properly. An appeal was made to the National Institutes of Health for funds to supplement those which could be raised locally. However, the National Institutes of Health representatives, investigated the situation and turned down the request. While here they stated that they had seen animal quarters much worse than these, where research was done.

At this point the heart research work was canceled on the pathologist's recommendation, because of the inhumane housing of the animals, and improper surgical arrangements.

Corrections Made

Subsequently, laboratory space was found near the hospital. It was fitted up with a heart-lung machine, the gift of a local health organization. A trained technician was employed. Instead of many dogs being incarcerated waiting to be used or convalescing, one dog is brought to the laboratory when needed. This dog is usually a whippet, retired from the racetrack and marked for destruction. The dog is anesthetized, used humanely and, if to be allowed to regain consciousness, he is taken to the hospital of a cooperating veterinarian for convalescent care.

National standards for the housing and use of animals would have prevented the unfortunate method of starting this important research work in such unscientific quarters. Such standards would doubtless have caused a considered plan to be developed that would have been fair to both animals and researchers even though Government money might not be involved.

EXAMPLE 2. THE ANIMAL QUARTERS OF THE ATOMIC ENERGY COMMISSION AT ROCHESTER, N.Y.

This visit was made in July 1960. My guide, one of the scientists, escorted me graciously through the building. After the tour which demonstrated many disturbing conditions, I asked him if he would have designed animal quarters like these. He answered with some vehemence, "No, indeed."

Findings

The building occupies a triangular piece of property, bounded by a cemetery and streets which prevent extension on the ground level. The quarters for the dogs are long corridors with two-tiered cages on each side and a passageway between the cages. The cages appear about 30 inches square. In the cages in

the several corridors are housed between 450 and 500 dogs. They stay in these cages, filed like library books on shelves for years as radiation effects are measured in terms of years. There is no exercise area. A dog's opportunity to run is limited to the amount of time it take an attendant to clean his cage, when he is taken out of his cage and given the freedom of the corridor for these few moments. There is no sunlight in these corridors. Electric lights are turned off at 3 o'clock in the afternoon and the dogs are left in complete darkness until 8 a.m. the next day.

When entering the corridor and the lights are turned on, bedlam breaks loose at the excitement of visitors. As one goes down the corridor, some dogs paw at the wire on the front of the cages, some just bark vociferous greetings, and some demonstrating their fear of humans, in action and in their eyes, cringe close to the back walls of their cages.

Why does this laboratory need to keep 450 to 500 dogs in "stock"? How many dogs does it take to discover effects of radiation or any other effect with which this laboratory may be concerned?

They are subjecting a few dogs and rabbits to radiation for a limited period each day for 3 years. What are they doing that takes such an enormous number of animals? The same space taken up with housing for 500 dogs would provide exercise areas for 100 dogs. Better still, outside quarters provided at a distance, which in this case would not have to be far, would provide experimental dogs with normal living conditions. Space on top of the low building is also available. Those being used by research scientists could be brought to the laboratory when needed. It is inconceivable that 500 dogs would all be needed at once.

We understand that the Commission is ordering plastic and aluminum cages to replace the present ones. More cages! This plan should be reviewed immediately. It is criminal to continue to put these lively animals in cages when apparently, the plan is to improve the situation. Improve it for whom? These new cages may be easier to clean but they will not give the animals normal exercise space.

About 50 cats are kept. They are not kept long. Perhaps this accounts for the limited size of the cat cages with hardly enough room to turn around or enough height to stand up comfortably. They, of course, have the same lack of light. There are about 30 monkeys which I did not see. There are numerous rabbits also in the small cages, all too small. There are about 35,000 other animals, rats, hamsters, pigeons.

It is obvious that this and other laboratories should employ a statistician to provide the scientists with information as to the fewest number of examples needed to obtain validated results, rather than destroying, maiming, and mistreating thousands of living sentient creatures, as is the habit at present.

EXAMPLE 3. RESEARCH PROJECT FOR A DOCTOR'S DEGREE

Ignorance and poor planning can be responsible for acquiring excessive numbers of animals and for their unintentional bad treatment. Under his professor's guidance a psychologist planned a research project for his doctor's degree, at one of our State universities. He decided to study the development of cats by observing kittens from the moment of birth.

For animal quarters, he rented an unused garage, old and with many wide cracks in the wooden walls. He personally, and without much skill, made some cages of chicken wire. The location of the garage was at great distance from his home and necessitated travel between the two places. A friend who also lived far away, was to help with the cleaning and feeding of the cats. He advertised for pregnant cats with the promise that the mothers would be returned after the kittens were weaned. He got numerous cats but the cats did not cooperate. Several escaped from the slipshot cages and roamed the neighborhood, giving birth to their kittens in yards, under houses or cars, and upset the humane-minded neighbors greatly. The young man succeeded in finding some of the borrowed cats but not all. The kittens all came down with infectious gastroenteritis and died. The research project folded. This whole cruel and wasteful fiasco was unintentional and the result of lack of proper and mandatory controls on animal experimentation.

EXAMPLE 4.—SITUATION AT THE J. HILLIS MILLER HEALTH CENTER, UNIVERSITY OF FLORIDA

The Animal Welfare Committee of the Florida Federation of Humane Societies contacted the administrators of the J. Hillis Miller Health Center as soon as ground was broken for the medical school. The committee offered its cooperation in reference to the housing of the laboratory animals and indicated its interest in seeing that the animal quarters met the standards accepted as providing the most comfortable housing for said animals.

It developed that proponents of cages for all animals, including dogs and cats, had influenced the planners and that the ground-floor rooms were to be lined with double-decked cages, the exercise areas being limited to the floorspace in the rooms, during the time the cages were being cleaned. Stock animals were to be housed here as well as those in use. Without going into detail about the many conferences and the unsatisfactory experiences of the administration, the scientists, and the animal handlers, with this type of housing, let us turn to the present situation. No stock animals are kept in the medical building, except rabbits and rodents. Instead, modern and comfortable kennel-type quarters have been built at "the farm," property owned by the university about 2 miles from the school. The cages in the school building are now used for convalescent animals under the watchful eye of a fine humane veterinarian. The only long-term dog residents in the school building are about 30 beagles being used in a research project. The beagles are housed in rooms, not cages. However, these indoor, windowless rooms do not approximate normal living for the dogs. It was hoped that the walls of the building could be opened and kennel runs provided for these beagles, but the architects and the administrators would not agree to this. In July 1957 we held a conference with one of the professors on the curriculum committee regarding a possible seminar for students on the care and use of laboratory animals. At that time, this professor stated that, as most students had recently come from homes where they had had pets, each student had a compassionate attitude toward the animals assigned to them. But, he said, the ones to watch were the graduate scientists who became so involved with their research projects, that they spared neither themselves nor their animals, in pursuing their objectives. The health center insisted on humane practices but it was impossible to keep track of all the scientists and he knew there were lapses.

In 1959 the veterinarian above mentioned was employed. He has keys to all laboratories and administrative permission to enter at any time of day or night to check on the welfare of any animal being used.

A recovery room with a registered nurse in attendance has been instituted. Animals used by scientists are cared for in this room and then transferred to the cages below during convalescence for 24-hour attention by the veterinarian and his staff. When able, the animals are returned to "the farm." All animals used for student practice are destroyed on the table before regaining consciousness.

Among other humane procedures is the use of a statistician who determines the number of animals necessary to produce valid conclusions without the cruel waste of using more than necessary. Also, a laboratory technician does blood and other tests to insure that the animals used will provide valid results. Such technics reduce the number of animals needed and result in more scientifically accurate conclusions. To improve the care of the animals and thus the validity of any scientific experimentation, the veterinarian in charge holds semiweekly classes for all the staff that handle the animals.

Unfortunately, the above description fits only a few laboratories. In too many laboratories, either from the cost motive, or ignorance of the importance of such procedures, and indifference to the physical and psychological needs of animals, conditions ranging from mediocre to bad exist. Even here, at the J. Hillis Miller Health Center, had there been mandatory standards in force at the time of planning the school, and had qualified experts in veterinary medicine been used as consultants, much waste in animals, time, money, and energy could have been avoided. The steps since taken by farsighted administration have paid off in advantages to the animals used, and the reliability of research conclusions.

It is sheer folly to think that satisfactory conditions will be instituted nationally without the pressure of legislation. Spokesmen for the unbridled use of laboratory animals are trying too desperately to put blinders on the eyes of the public to expect improvement without mandatory legislation.

CONCLUSION

The several examples cited indicate that legislation is needed to—

(1) Establish high standards for the housing of animals where they may live as normal a life as possible.

(2) To control the infliction of pain and distress.

(3) To prevent the enormous waste of animals caused by using unlimited and unjustified numbers.

(4) To require supervised planning of experiments to eliminate the trivial and repetitive.

Such legislation would not only protect animals now used but would doubtless stimulate the development of improvements in the use of insensate media, which is subject to more standardization than animals, with the resultant beneficial results on research.

The Florida Federation of Humane Societies urges speedy passage of comprehensive laboratory animal protective legislation based primarily on bills H.R. 1937 and H.R. 3556.

Mr. ROBERTS. This concludes our hearing.

I want to thank all of you for your patience with the subcommittee, and I want to thank the subcommittee for its patience with you.

There may be other statements that have not been submitted. We will go over these with the staff and try to see that a representative group of statements are placed in the record.

(The following material was received for the record:)

STATEMENT OF DR. MARJORIE ANCHEL

I wish to submit the following statements in support of the Griffiths bill, H.R. 1937.

I am a biochemist. My present position is senior research associate at the New York Botanical Garden. I received my Ph. D. in 1939 from Columbia University, College of Physicians and Surgeons. My doctoral work was done in the medical school, primarily in the department of biochemistry, but also in the departments of bacteriology and physiology. During this period, and also in postdoctoral years, I have used experimental animals, including mice, rats, cats, and dogs in my own research. Although in more recent years I have worked with plants more than with experimental animals, I am familiar with current animal experimentation as reported in scientific journals. I have no reason to believe that conditions which I observed in the past have changed. I am convinced that they will be corrected only by appropriate legislation, properly enforced.

Opposition to Federal regulation of animal experimentation comes on one hand from antivivisectionists, who want no animal experimentation, and on the other hand from scientists, some of whom want no regulation. I am not an antivivisectionist. I believe that animal experimentation is necessary for the progress of medical science. I am equally convinced that regulation of animal experimentation is necessary, and that it can prove of benefit to medical research as well as to the cause of humane treatment of animals.

I have come to these conclusions because of firsthand experience, and by consideration of the arguments of others, examined in the light of that experience. Awareness of the problem resulted from observation of instances of unnecessary cruelty in connection with experimental animals. Even more, it resulted from continually presented evidence of an attitude, much too general among experimental biologists, that animals are simply tools of research—no more, no less. I do not believe that regulation of experimentation will come voluntarily from within this group.

The advantages of good legislation per se, which have been pointed out in another connection, seem equally applicable here.

At a meeting sponsored by the Congregational Christian Church and the National Council of Churches it was pointed out that emphasis should be placed, not on trying to erase so-called individual prejudice, but on "changing the nature of the institutional structure and general public sanctions expressed in law, court decisions, legislation, and public policy." It was further said, "Expressed in the most direct and simple form, the principles suggested here indicate the strategic necessity of having legislation take place before education. Legisla-

tion sets the climate and standard of public policy, sets into motion new social sanction and expectations; at the same time, it provides a direct and immediate form of education."

Many of the arguments against Federal regulation of animal experimentation either evade the issue or distort the facts. They evade the issue in two ways: first, they present the question of animal experimentation as a purely scientific one, to be decided only by specialists, whereas the truth is that it is a moral issue, which scientists are not any more equipped to decide than laymen; second, they confuse the question of regulation with that of antivivisection, which is not the issue. Distortion of the facts is evident to anyone familiar with them. Further, it is made apparent by contradictions in the statements of the opponents themselves:

The National Society for Medical Research sent out a special memorandum, in 1960, to members of the Federation of Societies for Experimental Biology, which, as a Federation member, I received. The title of the memorandum was "Nine Reasons Why the Scientific Community Opposes Federal Regulation of Research in Biology and Medicine." Many of the "reasons" do not differ substantially from each other. But because they have been repeated so frequently in this form in the scientific and in the public press, I would like to analyze them individually.

NATIONAL SOCIETY FOR MEDICAL RESEARCH (NSMR) "REASON" NO. 1

"Presumably the proposal to police medical and biological research was introduced on the assumption that, at the present time, there exists significant mistreatment of animals in research and teaching laboratories. This is a false assumption. It is insulting to the men who are devoting their lives to scientific research and to the administrative officials in charge of the various institutions where research employing animals is done. If the Congress is in doubt about this matter, an investigation should be ordered before regulatory or punitive measures are considered."

Discussion.—I have never seen statistics on this subject, and do not believe they exist. The opposite statement, that a significant number of scientists are inhumane in their treatment of animals may equally be true. Both statements represent no more than a clinical impression. Moreover, "significant mistreatment" is not truly definable, since there is no agreement on what constitutes "mistreatment" when the term is applied to experimental animals, or on how much "mistreatment" there would have to be, to be considered "significant."

To my mind it is not necessary to assume that the object of an animal experiment is intentional cruelty in order to consider the animal mistreated. At best, one can say that it is mistreated for a worthwhile reason, for a legitimate scientific purpose. The same procedure, without the reason, would be immoral, and illegal under existing State anticruelty laws. Much suffering of experimental animals is unnecessary, and serves no scientific purpose. It is due to carelessness and indifference. Surely it is the right of everyone to demand that this be eliminated. Much suffering is involved as a necessary component of some experiments. Surely it is right that experiments of this nature be performed only by those qualified to perform them with skill, and to interpret them with understanding. Whether the quantity or quality of mistreatment is significant is a value judgment, and as such, is admittedly outside the realm of science. However, as with any other immoral act, like murder, it is not necessary to decide that its quality or quantity is significant before agreeing that there must be legislation against it, and police to enforce such legislation. This is not an insult to the general population. It is not insulting to research men and administrators to be considered human.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 2

"It is not reasonable to assume that police inspectors could be hired by the Secretary of Health, Education, and Welfare who would be wiser, kinder, and better qualified technically to supervise the conduct of scientific research than are the university presidents, deans of medical schools, directors of research institutes and academic department heads who now bear responsibility for the character of animal research in the United States."

Discussion.—Such an assumption is not necessary in order to justify the legislation and enforcement of acceptable uniform standards. The analogy of a police force still holds. Policemen need not be wiser, kinder, and better qualified techni-

cally than automobile drivers, in order to enforce the speed laws. Furthermore, the group opposing legislation has not given sufficient evidence that it is interested in enforcing acceptable standards. I am not even sure that most people would agree with the standards they might arrive at: In opposing the Cooper bill, Dr. Frederick Philips, past president of the New York State Society for Medical Research is quoted as saying (New York Herald Tribune): "The same surgeon who operates upstairs on a man, may do experimental surgery downstairs on an animal. He is as careful in one case as the other." It is true that there are surgeons who do experimental surgery on animals, and they may use the same care as on patients. But surgery is not even involved in the majority of animal experiments. Dr. Philips is obviously using diversionary tactics to draw attention away from the more disagreeable aspects of animal experimentation. As a pharmacologist, he knows that a great many distressing procedures involve no surgery at all: determination of convulsive threshold, toxicity tests, and other pharmacological studies. Other experiments involve procedures which would never be performed deliberately on a human being: shock studies involving burn, hemorrhage, or tourniquet. Furthermore, much of the surgery on experimental animals is not done by surgeons but by physiologists who do not operate at all on humans. There is nothing to prevent any kind of animal experimentation, surgical or otherwise from being done by entirely unqualified people. It is irresponsible to evade these facts, instead of discussing them openly, and seeking solutions to the problems they present. Dr. Philips is further quoted as saying, "There is no evidence that dogs in cages are less healthy or happy or in more pain than roaming free." Evidence at least that Congress is of a different opinion is offered by the recent passage of a bill providing for appropriation of funds for proper housing of Food and Drug Administration beagles, including runways to provide exercise and fresh air.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 3

"The bill to regulate research offers no constructive provisions for improving laboratory animal care but, on the contrary, provides numerous handicaps and hazards to scientific investigation. No provisions are made for research to develop better methods, training to develop better qualified personnel and appropriations for better facilities."

Discussion.—Constructive provisions for laboratory animal care seem to me quite evident in the Griffiths bill. Section 4(a) of H.R. 1937 states: "All premises where animals are kept shall provide a comfortable resting place, etc." Section 4(b) states: "Animals shall receive adequate food, etc." "Handicaps and hazards to scientific investigation" are not explicitly enough defined here to be discussed.

As to the last sentence in this "reason," it is not the purpose of the bill to provide for research to develop better methods, etc. It is the purpose of the bill to insure that only the best qualified personnel available perform animal experiments, and that only the best animal care available be used. It is quite possible that in seeking research funds for animal experimentation, consideration would have to be given to providing also for care and housing of the animals. This does not seem to be an unreasonable requirement.

Training better qualified personnel, and development of better methods are certainly desirable goals. There is nothing in the Griffiths bill which would prevent this being done either by educational and research institutions, or by the Government. On the contrary, once the climate and standards of public policy and new social sanctions and expectations are established by legislation of this kind, further improvements in the care of experimental animals is more, not less likely.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 4

"The bill states that, '* * * living vertebrate animals shall be used only when no other feasible and satisfactory methods can be used to ascertain biological scientific information for the cure of disease * * *.' strictly interpreted this would stop all medical and biological research except on plants and microbes for thousand of years until scientists could be sure that every possibility for the use of such lower forms of life in the solution of medical problems has been exhausted. Then and only then could the full range of modern research methods be employed.

Discussion.—No one would put the interpretation here given, on the provision quoted. It does not state "only when no other possible methods can be used, but only when no other feasible and satisfactory methods can be used." This is a question of impartial scientific judgment. It means that the research scientist would have to pause to consider whether the experiment could be done feasibly and satisfactorily using lower forms of life (there are other lower forms besides plants and microbes) and if not, he would have to defend this judgment in his project proposal. This is a valid requirement both from a humanitarian and scientific point of view.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 5

"The proposed Federal regulation of research includes the provision that no experiment or test on living animals shall be performed unless a detailed project plan is approved by the Secretary of Health, Education, and Welfare. The project plan must describe in advance all procedures to be employed with respect to living animals. This provision assumes that the investigator knows, in advance, each step in his research program. Such is not the case. The general objective is known, but the method of attack develops as the work progresses. Fruitless avenues are abandoned and new and developing leads followed as they open up. Indeed, the entire objective may be abandoned in favor of some newer objective that has come into view as the work progresses. The stringent regulation proposed would stifle real exploratory research and favor more perfunctory technological exercises where the outcome is already known in advance."

Discussion.—The requirement of a project plan is not appreciably different than that already in force for proposals requesting Federal funds for research. It should not stifle real exploratory research any more than does the requirement now in force. On the contrary, it well might avoid "perfunctory technological exercises where the outcome is already known in advance." Review of grant requests by competent scientists tends to avoid waste of Government money on unoriginal projects without potential value.

The proposed legislation will tend to avoid purposeless suffering of animals in unplanned or improperly planned experiments. It is true that there may be occasions when the extent of animal suffering involved in a project will have to be balanced against the scientific worth of the project. This too, is valid, and indeed, is one of the main principles of the bill.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 6

"The proposed law to regulate research demands that records be kept of experiments, that animals be identified in relation to these experiments, and that the disposition of animals also be recorded. Annual reports based on these records are to be made in Washington. Presumably the records to be maintained and the reports to be made are in addition to the already extensive records essential to the collection and reporting of scientific data. It is likely, therefore, that these scientifically useless reports would approximately double the burden of recordkeeping in conjunction with research. Not only would allocations for research be drained away in the employment of extra secretarial help, but also in Washington large numbers of clerks would have to read, sort, and file a mountain of such useless reports."

Discussion.—The records required are, or ought to be already kept by every biological scientist. There would be some extra paperwork, in making separate reports. This small sacrifice is justified, to implement the purpose of the Griffiths bill, a purpose with which few would disagree.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 7

"The proposed law would authorize the Secretary of Health, Education, and Welfare to appoint inspectors with authority to examine the records of individual scientists and to stop investigation and destroy the animals if, in the judgment of the inspector, the plans outlined in advance had not been followed accurately. The inspectors would have great power that could be misused to strangle research."

Discussion.—There seems to be no reason to assume that inspectors appointed by the Secretary of Health, Education, and Welfare would wish to use such power as they had, to strangle research. On the contrary, experience with people appointed in similar capacity in connection with Federal grants, has led me

to expect the opposite. However, the problem of choosing capable and conscientious inspectors is an important one. It will require understanding and sincerity on the part of humanitarians and scientists to solve it satisfactorily. It has been done in England. It ought to be possible to do it here.

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 8

"In discussing proposed special policing of scientists, Prof. Maurice B. Visscher has made use of the following useful analogy: 'Cruelty to children is and should be a crime. Some parents have been known to abuse their children. However, we do not, and I hope will not, set up governmental licensing bureaus to regulate which families may have children and to snoop on all homes to catch those infinitesimally few parents who beat their babies. We who love children know that such an espionage system would destroy more values than it would salvage.' All of the 50 States in the Union have statutes prohibiting cruelty to animals. In every instance these laws govern the work of medical scientists as well as other citizens. No scientist in the United States has ever been convicted of mistreating animals despite energetic policing of this possibility by the antivivisection cult."

Discussion.—The first part of this "reason" is difficult to discuss since it impresses me as simply silly. It is difficult to understand how responsible scientists can refer to it as a "useful analogy." It appears to imply that in general, physiologists love their experimental animals as parents do their children. The second part of the "reason" refers to the fact that all 50 States in the Union have statutes prohibiting cruelty to animals. This is completely misleading, since these statutes often specifically exclude animal research in laboratories. Furthermore, the NSMR specifically objects to enforcement of anticruelty legislation in the laboratory by an outside agency. The statement is made that "No scientist in the United States has ever been convicted of mistreating animals despite energetic policing of this possibility by the antivivisection cult." Does this imply that no single instance of cruelty exists? The fact that this is not the case has been recognized, most commendably by the American Physiological Society itself, which recently adopted the policy of not accepting for publication in its journal, papers based on experiments involving unnecessarily cruel procedures. (This, of course, only prevents unnecessarily cruel experiments from being published, not from being performed.)

NATIONAL SOCIETY FOR MEDICAL RESEARCH "REASON" NO. 9

"The United States leads the world in medical research. This leadership not only makes our Nation healthy and strong, it makes the United States a great world benefactor, for discoveries made here alleviate suffering and save lives everywhere. Much of the progress in medical science in the United States is due to substantial Government support of research. The value of governmental support depends in great degree upon care to avoid excessive bureaucratic pressures that could make Government support more destructive than beneficial. The object of research is innovation and innovation demands a reasonable degree of freedom.

"Indeed, it is undoubtedly true that the great achievement of the American people in science and technology since the founding days of the Republic have been due more to the free political environment of the United States than to any other factor. Here unregimented minds have been free to create, and they have created more new things than any society that ever has existed on this earth.

"It is important to understand how closely the scientific leadership of the United States is tied to America's historic abhorrence of regimentation."

Discussion.—The statement that the United States leads the world in medical research is not a noncontroversial one. But the question of importance here is not the truth of this statement, but the question of how Federal regulation of animal experimentation will affect medical research in this country. The experience in England demonstrates that it need not hamper research. The fact is that with considerably less support, the quality of English physiological research is as fine as any. If the quantity of American research is greater, it is rather because, as stated in No. 9 of the reasons, "much of the progress in medical science in the United States is due to substantial governmental support of research." There is no quarrel with the rest of the statements in No. 9. In ad-

ministration of the requirements of bills like the Griffiths bill, it will be as important as it always is to avoid excessive bureaucratic pressures. The measure then, far from hampering research, may well improve it by assuring more responsible investigators and less wasteful experiments.

Legislation is rarely perfect. By its very nature it implies some limitation of individual freedom. It seems not unreasonable that scientists should submit to some inconvenience in the interests of legislation which represents a landmark in the progress of civilization, and need not hinder valid scientific research.

STATEMENT OF HELENE ARTSAY

I wish to testify why I firmly believe that H.R. 1937 and S. 3088 not only should, but absolutely must be made law just as quickly as legislative procedures permit.

As a veterinary student in a university to which I am proud to belong, I have been fortunate enough to learn the highest humane standards in laboratory animal care and experimentation. As a visitor to laboratories near my home in New York, I have had the misfortune of seeing the other side of the picture—a side where the most elementary humane standards are unknown or simply ignored. As the medical researcher I plan to be, I would be as much bound by a law protecting laboratory animals as anyone, including paperwork, licensing, and any other procedures involved, but I would willingly work under a law even stricter than the one proposed, if it were needed to stop some of the things I have seen.

In the first institution I visited, the dogs are never exercised, not even on the floor, while the cages are being cleaned. As I walked into a particular dog room, I was met by a powerful stench of ammonia. The cages were solid-bottomed, and the wet metal was spotted with small piles of wood shavings thoroughly soaked with manure and decomposed urine—the source of the ammonia smell. Cockroaches were visible in several cages, crawling in the filth, even though the light in the room was quite bright. In one cage there was no food dish; the food had been emptied onto the cage bottom and the dog was nibbling on a mixture of dogfood, wood shavings, excretions, and cockroaches. The sign on the door of this room read "Special Diet."

The main dog kennel of the second institution I visited was dark and ill ventilated. When I entered, the smell of manure was so strong I thought the kennel had not yet been cleaned, but the fresh soapy water trickling toward the floor drain told otherwise. The dogs are not exercised here either, and most of them seemed hypertense. The barking was frantic when I entered, and the dogs spun round and round, and bounced up and down, banging themselves violently against the sides and ceilings of the small cages. The cages were constructed of mostly solid metal sides and tops, with wire mesh floors, allowing for only difficult entry of light, which was scarce enough already. The outside of the cages were spotted with splash upon splash of dried manure, which seemed to be the source of most of the foul smell. In one wire-mesh-bottomed cage lay a medium-size pointer-type bitch with puppies. Her only bedding was a feces-soaked rag. The bodies of the pups were spotted with caked manure and they were suckling from nipples which were similarly soiled. Not even an experimental cannual which had been inserted through the bitch's abdomen showed any signs of human care.

The cat room smelled stronger and worse than the dog room, and several cages had dried manure hanging down from the perforated metal cage floors. On one cage, a diarrheal stool had trickled out and dried on the outside of the door.

On the top floor were more dogs and a large outdoor roof terrace. Fenced in, this terrace would be ideal for exercising dogs, yet it still remains unused.

I entered a small experimental room in which there were three dogs in cages and a treadmill with a dog on it, tended by a boy who seemed to be about 17 years old. Two of the dogs in the cages were panting and huddled to the sides of the cages. I was told that the boy was trying to find a dog willing to run the treadmill for a blood pressure and respiration test, but the dogs were not cooperating. A treadmill consists of a moving track, on which an animal has to run in the opposite direction of the movement, in order to stay in the same place. This track was covered with bloodstained burlap. The boy fastened a leash to the dog's neck, held it tight, and without warning started the treadmill at high speed. The dog, who was completely untrained as to what was expected of him,

scrambled frantically to maintain a footing. The inexperienced claws caught in the burlap, ripped, and began to bleed. The dog panicked, pulled violently at the leash, and began to froth at the mouth. Only then did the boy stop the track and return the terrified, bleeding, "uncooperative" dog to its cage. If this highly respected research institution is really interested in good standards of laboratory animal care, without a Federal law to insure it, why was an unsupervised boy, who knew nothing of how to successfully teach a dog to run a treadmill, placed in charge of such a task, and why was the research scientist not around to show an inexperienced technician the proper way?

At no time during my visits did any of the laboratory personnel speak of these conditions as unusual or isolated. Instead, when I asked, at the foul-smelling dog kennel, if the quarters that day were in usual shape, I was told that since it was summer and most of the researchers were away, there were fewer animals and thus more time was spent on individual animal comfort than was the case during the school year. Another time, I was impressed with rabbit quarters, in that each large rabbit had a cage of about 4 square feet floor space. I was informed that during the school year, six to eight rabbits were kept in each cage. When I remarked that the rabbits must not even be able to move when packed so tightly, the staff member simply shrugged his shoulders. These are the very people whom opponents of the proposed law claim are putting forth such effort to achieve and maintain the highest humane standards without a Federal law to spur them.

Therefore, because of three main factors existing in research laboratories, examples of which I swear I have myself seen: (*a*) poor conditions of quarters for experimental animals in general, (*b*) specific cases of needless cruelty to individual animals, and (*c*) the disinterested, complacent acceptance of these unfortunate circumstances by scientists and laboratory personnel, the only people who can really help these animals, it is imperative that Congress make H.R. 1937 and S. 3088 into law—a law which will not in any way hamper responsible aniaml research, but will end once and for all the present shame in our biological sciences.

STATEMENT OF SALLY CARRIGHAR

As a naturalist who has studied animals, lived among them, and written books about them, I am concerned about their treatment in laboratories. I do not oppose their use in important research. I do protest their indiscriminate use, and use without regulation.

In a natural environment most animals have some means of defending themselves or escaping if anyone threatens to make them suffer. In a laboratory they have no such chance. They are completely at the mercy of any research worker who wants to experiment upon them. Since it is unrealistic to hope that all scientists and students are merciful by temperament, this proposed law, H.R. 1937, should be enacted to safeguard the animals against needless pain. In all civilized countries the helpless among human beings are given the law's protection. We are less than civilized if we do not extend some protection also to the animals used in research—animals to whom we are vastly indebted. Most of them suffer, and many die, in order that we may have better health. Are we so insensitive that we would deny them relief from an excess of misery?

I want to suggest in a moment that the very essential quality of kindness should be nurtured in all young medical students. Soon they will be doing their experimenting on people rather than animals. It concerns all of us, then, to make sure that gentleness has been built into the training of these future doctors. But first please hear my evidence that cruelty does exist in some of the laboratories.

In my biological training I have had association with many research workers and medical students, and the best of my evidence comes from within the scientific professions, themselves.

Some of the methods used in laboratories have changed in the last few years. For example, dogs are now deprived of their voices by surgery before any experiments are begun. In a biology building where I formerly worked at night, the dogs used in experiments were housed on the other side of the wall. The scientists had gone home—but if they had been there, the whimpering and yelping of the dogs would have told them that drugs to relieve the pain should have been administered. Remembering those agonized canine voices, I recently asked a young physician how the newer medical students can judge

the need for sedatives if a dog has been "devocalized," as the scientists phrase it.

His answer was startling. He said, "It is the prevalent attitude in medical schools now that dogs can't feel pain—dogs do not suffer." The prevalent attitude: meaning, in the simplest terms, that medical students are encouraged to believe that drugs to relieve the animals' pain are not required.

Among the conditions those voiceless dogs are enduring are artificially induced cancers, amputations, recording mechanisms placed inside their bodies, and postoperative complications. But their discomfort does not require merciful alleviation because—according to this preposterous theory—they cannot feel it.

That theory is an astounding example of scientific hypocrisy. If a research worker seriously can reject the idea that animals suffer, how dependable are his conclusions from the results of his experiments? For did none of these medical students, when they were boys, ever step accidentally on a puppy's paw? Did none of these young men ever pull porcupine quills out of the nose of a quivering dog? Did none of them ever see an aged dog endlessly licking, licking an arthritic joint? It is true that some dogs do not protest when they are suffering. They stand the pain mutely. But can the students deceive themselves into believing the pain is not there? It doesn't seem possible—and yet that is the prevalent attitude in today's medical schools.

When I expressed my surprise that such an idea could have taken hold, the young physician who had given the information challenged me with the question, "How can you prove that animals suffer?"

I relayed the question to an older doctor. He answered, "Why, pain is nature's mechanism, all through the animal kingdom, for self-preservation. Pain is nature's warning. Without pain as a deterrent, animals would allow other animals to bite them, they would not learn to avoid danger, they would injure themselves fatally long before they were mature. Of course animals, including dogs, can feel pain. It is ludicrous to believe anything else."

Ludicrous—and yet, with the uses of pain so fundamental a part of all animal life, medical students are allowed to ignore its inevitability. Without a basic understanding of pain, its causes and its signficances, what kind of doctors are being turned out by the medical schools today?

This older physician (and he is not very old, at that—about 40) discussed further the treatment of animals used in experiments. He feels that a thoroughly conscientious and mature scientists would try to alleviate pain in his animal subjects. "But," he said, "in the medical schools there are a fair number of immature students who perform, as pranks, operations that are of no value but which they regard as amusing." "In the case of such students," he continued, "there is not likely to be a very responsible attitude toward the relief of pain." The physician felt that some means should be found to stop such wanton playfulness. The bill now under consideration would end it, and should be supported if for no other reason.

Two years ago the medical students at one of the larger eastern schools were given a personality test. To everyone's surprise, it was found that humanitarian motives no longer impel the majority of students into the medical profession. The motive most often revealed, now, is at the other end of the personality scale. That is to say, these boys had embarked on their medical careers because of an authoritarian bent: because of their wish to rule, to dominate.

It does not take a particularly strong type of character to dominate a very sick human patient, and the temptation to do so apparently is a growing one. Closely related to the domineering temperament is often, of course, a lack of sympathetic feeling. Indeed, for some time medical schools have recognized that their profession attracts an occasional sadist. "Medicine gives him a chance," they admit, "to express cruelty in socially acceptable ways."

Any patient who has experienced the healing kindness of a truly humane physician will feel a gratitude that cannot be repaid by the settlement of any bill. But that sort of healing is available less and less often. In fact, it is well known that human patients are sometimes used these days as subjects of experimentation—any of us may be so used without our knowledge. But we can dismiss a doctor whom we suspect of cruelty or indifference to our pain. The animal in the laboratory is not so fortunate. This law, if it is passed, will protect the animals both against cruelty and neglect; at the same time the law will protect the rest of us by making it part of a doctor's training to learn the exercise of compassion.

I heard a middle-aged doctor say a few months ago, "In the newer graduates one can detect * * * a little coldness." Do any of us wish to be treated by physicians in whom there is coldness? One very effective way to prevent the coldness is to make sure that, as students, they treated with mercy the animal subjects through whose suffering they have learned their skills.

STATEMENT OF ELEANOR CRISSEY, M.D.

My name is Eleanor Crissey. I am a physician in private practice in New York City and psychiatrist to outpatients at the New York Hospital, Department of Psychiatry, Cornel Medical School. I urge prompt enactment of H.R. 1937 for the humane treatment of experimental animals. I consider this legislation to be of major importance for two fundamental reasons: because animals should not be forced to undergo needless suffering, and because the inflicting of cruelty and the callousness which results from it damage the characters of individuals or groups of persons permitted to inflict it.

I have long been concerned with this latter problem, in fact, since my studies at Smith College where I took a master of science degree in psychiatric social work. My later experiences as an intern and resident at Bellevue Psychiatric Hospital provided further evidence of the profound seriousness of the problem. It is essential for the health of our society to prevent cruelty; especially important is the prevention of mental attitudes which gloss over and justify cruelty while in fact encouraging its spread. H.R. 1937, by seeking to keep the infliction of suffering to a minimum, brings the moral problem to the consciousness of each individual who uses laboratory animals. It becomes his duty by law to plan his research in the most humane manner he can devise. Legislation of this kind is the most effective education. In Great Britain where a similar law has been in force for nearly a century, the relatively far more considerate attitude toward animals in laboratories has grown up as a kind of second nature. This is a healtly cultural influence which we should encourage.

These simple and effective rules to prevent needless suffering are the opposite of attitudes which I have observed in too many cases with regard to experimental animals. Indifference and callousness on the part of some, combine with cruelty on the part of others to create intolerable conditions for animals. Furthermore, this results in the injury, suffering, and death of animals for reasons quite unconnected with the research for which they are being used. As a result, the data is partly wrong, and their publication is likely to lead to further confusion yet even in institutions where large sums are expended for animal experiments, failure to house and care for animals humanely is constantly creating this confusion. Use of needlessly large numbers of animals and the overcrowding which so often brings about the death of a portion of the animals is just one cause. Irresponsibility and ignorance on the part of animal caretakers and failure to follow up on the part of administrators cause untold amounts of suffering among laboratory animals. Most of this suffering never comes to light. The only people who know about it are those who are responsible for it.

It is essential that able inspectors, enforcing a clearly defined law such as H.R. 1937 and S. 3088, be empowered to visit unannounced and to insist upon the raising of standards wherever necessary in the treatment of laboratory animals, first, in the humane design of experiments, second, in the provision of a reasonable amount of space for every animal to move about in and to live comfortably, and third, in care and handling, feeding and watering. In all three of these categories suffering which causes terror and despair should be given careful consideration, as well as physical suffering. Experimental psychology has long established that many of the species of animals used generally for experimental purposes of all kinds can undergo mental suffering, despair, and death from these causes in much the same manner as human beings. We cannot, therefore, in good conscience, limit our concern nor leave these conditions, as they now are left, in the hands of individuals, who, by reason of ambition, indifference, callousness, or even laziness, cause endless suffering, maiming, and needless agony to unprotected animals.

I strongly urge prompt enactment of H.R. 1937 and S. 3088 for the good of the animals, for the accuracy and validity of the scientific work in which they are used, and for the good of the civilization which our country represents which must not continue to be blighted by cruelty to the defenseless.

STATEMENT OF BENNETT M. DERBY, M.D.

I would like to stress my deep interest in the proposed bills, H.R. 1937 and S. 3088. In my opinion, such bills would help rectify any unnecessary or irresponsible use of animals in experimental work and would enforce the needed minimum standard of humane husbandry, all of which has been so successfully carried out in England.

I believe it is to our detriment that we have, up to now, had no such national standard in our laboratories. I have had occasion, in the past, to use animals in experimental work, and have seen highly humane care and consideration for the animals; but, on the other hand, I have seen inexcusably lax and esthetically sickening conditions in some laboratories. It is the latter type of situation which would be eliminated to a great degree by the proposed bills.

It is my sincerest hope that the wisdom of such legislation will be recognized and put into effect.

STATEMENT OF MRS. JUNE E. FOYE, SECRETARY, COMMISSION ON CHRISTIAN SOCIAL CONCERNS, VANCOUVER AVENUE METHODIST CHURCH, PORTLAND, OREG.

The Commission on Christian Social Concerns of our church, which has as one of its concerns the humane treatment of animals, is greatly disturbed by authenticated reports of the inhumane and often brutal treatment of experimental animals by incompetent and callous researchers in many laboratories throughout this country, and we earnestly implore Congress to act favorably on bills H.R. 1937 and S. 3088 which will do much to rectify the situation and yet not hamper valuable medical research.

We are in complete agreement with the following statement made by Dr. Albert Schweitzer: "Those who experiment upon animals by surgery and drugs * * * 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 * * *."

STATEMENT OF DR. DOROTHY D. HAMMOND

As a college teacher of genetics to zoology and physiology majors for many years, and with long experience as counselor to science students in a college guidance bureau, I am eager to express strong support for the bills H.R. 1937 and S. 3088.

Possession of advanced academic degrees unfortunately in no way insures humaneness of outlook. I have observed carelessness, callousness, and even punitiveness in the treatment of animals by some scientists. I have known scientists who gave lip service to the desirability of good care for experimental animals but who, in practice, treated the animal as if it were an insentient piece of laboratory apparatus.

Investigators who treat experimental animals with consideration often hesitate to criticize, openly, less humane colleagues, although distaste may be expressed privately. I recently heard a biologist contrast the long lifespan of large-veined rabbits used as a daily source of blood in his laboratory with the short lifespan of small-veined rabbits used as a blood source in some other laboratories. He characterized what is done to the latter as "slow butchery." I know from experience that when there is someone who is alert to poor care or mistreatment of laboratory animals and who is willing to voice criticism and accept the anger that such criticism often evokes, the treatment of animals immediately improves.

I am particularly interested in the treatment of animals used in college biology laboratories. With the rising number of classes using live animals and with the increasing encouragement of undergraduate research projects on living animals, it is tremendously important that young people understand as early and as definitely as possible that the animal has a right to good care and humane treatment.

I think it indefensible that animals are now permitted to live after undergraduate students have performed operations upon them. Any operations on living vertebrate animals are best restricted, as required in Great Britain, to the graduate level. There is, however, a vast difference between permitting

operations without the animal's subsequent return to consciousness and permitting those after which the animal is allowed to live and to suffer postoperative pain. I believe it to be poor pedagogy to teach students of impressionable age that they have a right to inflict pain on animals for purposes of practice in operative techniques to win prestige and prizes.

I find troubling the extreme attitudes of some of the members of the National Society for Medical Research and what I feel to be their misrepresentations and lack of scruple. As a minor example, the booth of the society at an annual meeting of the American Association for the Advancement of Science was decorated with a large photograph of healthy kittens playing happily in an old straw hat against a country background, a picture which seemed to bear little relation to laboratory experiments with kittens. I consider its use dishonest.

After studying these bills carefully (H.R. 1937 and S. 3088) and the statements of their opponents, I believe that this legislation will not hamper responsible teaching or research. I also believe most emphatically that the provisions of the bills are badly needed.

SUPPLEMENTARY STATEMENT FROM THE HUMANE SOCIETY OF THE UNITED STATES, WASHINGTON, D.C.

For the information of the committee and of the House of Representatives, we offer supplementary facts about two issues discussed during the hearing. They are:

(1) The effect of the proposed legislation on medical research; and

(2) The probable cost of administering H.R. 3556 should it become law.

One witness appearing in opposition implied that development of the surgical technique for saving "blue" babies might have been made impossible had H.R. 3556 been law at the time. The witness argued that experimenters at Johns Hopkins University would have been prevented from progressive development of their research work.

Careful analysis of H.R. 3556 will show that the allegation is unfounded.

Requests for Federal funds to support such research can easily be drafted in a form that will permit development of the research along all reasonable lines. What H.R. 3556 aims at controlling, and would control, is the kind of boondoggling and outright fraud of which Dr. Philip Hauge Abelson, editor of Science and one of the most respected scientists of the world, was speaking when he said (the Saturday Review, Oct. 6, 1962) that today it is "common * * * for scientists to ask for money for research which they have no intention of performing."

As testimony before the committee has revealed, many other scientists agree with humane societies that science will be advanced, not retarded, by a requirement of integrity. Dr. Abelson told the Saturday Review interviewer that:

"Heavy financial support from the Federal Government for scientific research has attracted to the scientific world many men and women with no adequate motivation or intellectual capability to contribute anything important to science."

H.R. 3556 is aimed—and aimed accurately—exclusively at those who abuse animals and waste money because they are dishonest or because they lack "adequate motivation or intellectual capability." No research and no "blue baby" will ever suffer from controls over such misfits and misfeasants.

As to the cost of administering H.R. 3556: This law would be not costly but, instead, financially profitable.

The Agency for Laboratory Animal Control would, of course, have access to and would make use of information already available to many Government agencies but nowhere correlated or studied with the objective of preventing duplication, waste, dishonesty, and cruelty. The Agency also would have access to electronic and mechanical statistical and data processing equipment already owned by the Federal Government. Much of the work of the Agency would be done with that equipment. Several committees of the House and of the Senate already have urgently recommended just such a program with the objective of improving medical research and reducing waste of funds.

We envision the staff of the Agency for Laboratory Animal Control as consisting of the Commissioner, an Assistant to the Commissioner, a group of statisticians (biometricians), a small group of biological science specialists, a

small staff (perhaps 10) of field inspectors, 1 or 2 veterinarians, and the necessary clerical force.

We estimate that the total cost of such a unit, including travel expense and the cost of use of computers and data processing machinery, would be well under $400,000 a year. It might easily be substantially lower, depending upon the cooperation received from other Government agencies.

Since the Federal Government is granting funds for medical research currently at the rate of more than $1 billion a year, the estimated cost of operation and administration of H.R. 3556 would be only four ten-thousandths, or four-tenths of 1 percent, of the funds being given away and spent.

Most certainly the operation of H.R. 3556 would save many multiples of that amount of money for the taxpayers, besides preventing cruelty and suffering.

STATEMENT OF MR. JOSEPH WOOD KRUTCH

In every civilized country wanton cruelty to animals is forbidden by law. No persons should be exempt from such laws or from the provisions which make them effective. Those who, as a matter of routine, are engaged in experiments involving even necessary cruelty, inevitably become somewhat insensitive to suffering. Law should effectively remind them that to inflict pain, either unnecessarily or for any purpose not serious and urgent, is barbarous.

STATEMENT OF C. LADD PROSSER

The following statement is for hearing record concerning the Moulder and Griffiths bill (H.R. 3556 and H.R. 1937). I am a professor of physiology at the University of Illinois with more than 30 years' experience in physiology laboratories. I am the past president of the Society of General Physiologists and of the American Society of Zoologists. I believe that my experience qualifies me to give a valid opinion of these bills. I should be very pleased to be permitted to testify at an open hearing on these bills should this be desired by the committee.

Why should there be experimentation on animals? The immediate practical applications in medicine are well known; for example, the development of immunization against polio, the discovery of insulin, the development of many surgical operations. In agriculture much has been accomplished in livestock improvement by endocrinological, genetic, and nutritional experiments on domestic animals. Similar advances are being made in fisheries research. Modern agriculture could not have reached its present state without much experimentation on chemical control of insects. Certainly human life has been prolonged and made more pleasant as a result of animal experimentation. Another very important justification is the extension of frontiers of knowledge, learning the nature of life itself. It is certainly as important to understand the intimate processes of living organisms as to learn what is in outer space.

Granted the need for animal experimentation, is there need for the proposed regulatory legislation? In my 30 years in laboratories I have never seen willful cruelty. In our own laboratory, as in others, a printed code for humane treatment of animals is displayed. Our students are trained to use anesthetics or in terminal experiments to dispatch the animal promptly and painlessly. Every experimenter wants to study life precesses under as nearly normal conditions as possible. Results obtained from animals in pain would have little validity. Our scientific journals of physiology, pharmacology and zoology carefully screen papers for the methods used. Many zoologists, and physiologists enter the profession because they are fond of animals and have a sincere desire to learn more about them. Many are motivated by a desire to make discoveries which will relieve human suffering. The proponents of the proposed bills have quoted sentences from published papers as evidence of cruelty. Usually these are quoted out of context and are thus misleading and erroneous. My conclusion is that these bills should not be enacted until real need for them is demonstrated and that such need does not now exist.

Are the proposed bills practical and will they help American science? The requirement of prior approval of specific research use of animals in advance of an experiment would prohibit the day-to-day planning which is so essential

in active research. The essence of good research is to take advantage of the breaks as they occur. In my own work I plan the experiment of each day or week on the basis of what I learned in the previous day or week. I use different animals for the different purposes. It is impossible to predict over long periods what animals will be needed. Certainly a field zoologist who is collecting mammals, birds, or fish cannot predict what will be captured in his traps. Teaching and research cannot be separated and it is impossible to predict exact animal needs for classes. The stipulation that animal requirements for research be approved in Washington would add materially to the cost of research and would eliminate the free exploration of many new ideas.

H.R. 1937 is written to regulate use of all vertebrates. It is not limited to monkeys, dogs, and cats, but includes rats, mice, birds, frogs, and fish of all sorts; thus, agricultural stations, fisheries, and conservation laboratories, marine stations as well as universities and medical and veterinary research institutions are affected. The nervous systems of frogs and fishes are very different from those of cats and dogs, and methods for producing loss of consciousness in one group often do not apply to the others. A great deal of important research in embryology is done with eggs of frogs and fish. It would be virtually impossible to keep count of all the eggs laid by even one of these. Certainly experiments on an embryo which does not yet have a brain should not be subject to the same rules as those on an adult monkey. The differences between fish and mammals are great, but it seems improbable that regulation would stop with vertebrates. H.R. 3556 would regulate not only for all vertebrates, but "any other species capable of developing a conditioned response." This would include all insects, earthworms, even such protozoans as Paramecia. Thus, all animal biology from work on unicellular forms to primates would be subject to regulation. Kind of animal used is not of real significance, rather it is the principle of regulating qualified animal experimenters that is wrong.

Is there theoretical justification for so-called humane legislation? These bills are based on the assumption that what is painful for a man is also painful for a fly, worm, fish, or a mouse and that what is pleasant for a man is pleasant for all animals, even those reared in cages or aquaria. I do not agree with this assumption, mainly because of the marked differences in nervous systems. Some protozoans which have no nervous systems can be conditioned. The nature of consciousness is not definable, and all living things—plants, microorganisms, as well as animals—have certain self-protective properties which can be separated only quantitatively from what man calls consciousness in himself.

More serious is the implication that biologists, among all scientists, are cruel and amoral. Certainly medical and agricultural biologists should be dedicated to human welfare. There is no effort to regulate the free research of physicists and chemists. The use of insecticides to kill insect pests (and at the same time to damage birds), the pollution of streams by agents toxic to fish, the castration of pigs and cattle by farmers are practices which seem necessary in modern civilization and which involve far more animals than the few used in laboratories.

H.R. 3556 would license persons with doctoral degrees "in medicine, veterinary medicine, physiology, psychology, or zoological science." This would exclude pharmacologists and the hundreds of biochemists who use animals. This bill specifies that anesthetics "shall be administered only by a licensed veterinarian or a doctor of medicine qualified in anesthesiology." This means that every zoology, physiology, or psychology department must have such a staff member. I doubt that medical anesthesiologists would be as competent with fish or earthworms as the persons who have doctor's degrees based on work with such animals. This bill specifies that the Commissioner shall never have been connected with any laboratory. This would give complete control of animal biology in America to a man who knows nothing about the subject.

It is maintained that this bill is modeled after one in Britain. Actually it goes far beyond the British bill in its regulations and the kinds of animals included. I have done physiological research in England and have many British colleagues who agree that they are definitely limited in their research by a law which is much less stringent than the one proposed here. This is not a mere matter of licensing a few practitioners.

To maintain its strength in science, both fundamental and applied, America must encourage rather than limit biologists who, in all humaneness and respect for life, are trying to learn the secrets of life in vertebrate animals. I

conclude that the proposed bills, H.R. 1937 and H.R. 3556, are not necessary, that they will add to Federal costs for research, that they will restrict freedom in exploration of ideas, and that they are not practical.

STATEMENT OF JULIET RAINEY, CHICAGO

There can be only one possible argument for the use of living animals for experimentation: the furtherment of useful knowledge. Unfortunately, this argument is often lightly used to cover a multitude of atrocities which do nothing to increase knowledge and do cause an untold amount of unnecessary suffering.

Any animals used for research should be properly and adequately housed, with comfortable bedding, plenty of room for exercise, clean conditions, and responsible people on hand to care for them in case of sickness. This is the very least we owe to them. But this we do not usually give them.

I have been a technican in a large medical school, and I can witness to the fact that dogs are housed in cages scarcely big enough to turn around in, without bedding and with only a metal mesh for floor; that attendants very often forget to feed or give water to mice in their crowded cages, and death very often results before the negligence is noticed; that the stench coming from the building where all these animals—dogs, cats, rabbits, mice, rats, guinea pigs, etc., are housed, indicates inadequate care; that there is no trained veterinarian in evidence; that guinea pigs are sometimes killed by being hurled at a table top; that the same dogs are used again and again for operations, and sometimes collapes from weakness as they are dragged back to the scene of experimentation.

The following is an example, from my experience, of callousness and incompetence that caused great suffering to an animal.

An experimenter (a doctor of medicine) was preparing to bleed a rabbit directly from the heart. This is of necessity a painful process needing careful handling when, as in this particular experiment, anesthetic is not used. There were three or four prolonged periods of terrible squealing from the rabbit. This was on Friday.

The following Monday it was learned that the animal had broken its back in its struggles. The experiment had been postponed and it was still alive. A humane animal caretaker, after observing it in its cage, came to ask me what was wrong. He was very angry and insistent that action be taken. The rabbit should have been immediately destroyed. However, it was killed several hours later as planned, by withdrawal of blood from the heart without anesthetic, in spite of the broken back.

We must hasten to impose some firm and reasonable legislation upon all this. I can see no possible excuse for us to allow any longer the unnecessary, useless misery of millions of animals, and I urge enactment of H.R. 1937 and S. 3088.

STATEMENT OF THE NATIONAL SOCIETY FOR MEDICAL RESEARCH, SUBMITTED BY RALPH A. ROHWEDER

MORE PAMPERED THAN PETS

If a Texas millionaire wanted to give his pet hound the world's finest care, he would be hard put to equal the kid-gloves treatment which thousands of dogs receive today in modern animal research laboratories throughout the Nation.

In immaculately kept "vivariums" maintained by government health agencies, universities, pharmaceutical laboratories, and research hospitals throughout the United States and Canada, dogs and dozens of other animals from mice to goats are vastly more pampered than the most prized household pets—and for good reason.

Scientists engaged in the continuing struggle to preserve and prolong life—both for human beings and animals—need to test lifesaving drugs and study other medical procedures on living organisms. They must study life in order to protect life.

"Without animal experimentation," says Dr. Morris Fishbein, editor of Medical World News and longtime former editor of the Journal of the American Medical Association, "We would not have serums or vaccines, anesthetics or

antibiotics, or the great armamentarium of modern synthetic chemotherapeutic medicaments that bring relief from pain and recovery from a host of diseases that formerly destroyed human lives. Hogs would continue to perish in epidemics of hog cholera. Cattle would still be destroyed by the millions because of tuberculosis. Dogs would peril their own lives and those of all other animals by transmitting rabies, distemper, and other plagues."

To insure the success of hundreds of millions of dollars worth of life-prolonging research, a typical modern animal research laboratory at the University of Illinois accords some 10,000 animals almost unequaled care.

In a new $2,250,000 medical research laboratory at the University of Illinois Chicago Professional Colleges on Chicago's near West Side, thousands of mice and rats, a smaller number of dogs, rabbits, cats, chickens, pigeons, hamsters, guinea pigs, and usually a few rarer species never had it so good on the farm, in a zoo, or even in the most avid pet-fancier's home.

A 320-ton air-conditioning unit for the university's animal quarters supplies sterilized air at controlled temperature and humidity. No building for human habitation has a more elaborate system and almost none of even the newest hospitals provide such comfort for human patients.

Even well animals get treatment accorded to few sick humans—including sterilized food containers, sterilized rooms, stainless steel cages, and their own nurse and veterinarian. Even an indoor loading platform in the windowless building keeps animals from getting chilled en route to their new quarters.

This animal "club" is so exclusive that new arrivals aren't even allowed to mingle with the regular "guests" till after a month's quarantine assures that they are free of diseases brought in from the outside.

While the University of Illinois facility is one of the newest and finest among the Nation's medical schools and research institutes it is by no means unusual. A new animal house being constructed for similar purposes at the University of Chicago, for example, will cost approximately three times, per unit of space, what it costs to build a new office building, or seven times the cost of the same space in a fine new home.

The elaborate care that goes into the keeping of these animals extends as well into the experiments in which they are used. Contrary to popular misconception, fully 90 percent of all laboratory animals in the United States never feel the sting of an anesthetic needle. The reason: they are used principally in feeding, pill dosage, vitamin evaluation, and other such research which does not require surgical procedures. As just one example, the lifesaving "iron lung" was perfected on 24 cats who did nothing but sleep all day. The most commonly used animal is the mouse, which is used extensively in screening drugs for effectiveness and undesirable side effects before they are administered to the first human patient.

Animals used in the development of surgical procedures—such as the dogs which allowed doctors to perfect the lifesaving "blue baby" heart operation—are fully anesthetized, of course. It would be foolishly impractical not to duplicate the procedures used in human surgery, for the purpose is to apply the results to human surgery.

"We go to such lengths to care for our animal subjects, certainly for humanitarian reasons," says Dr. William C. Dolowy, administrator of the University of Illinois Medical Research Laboratory, "but also for good practical scientific reasons. The success of our work depends upon preventing extraneous factors from misleading our research. It is actually more economical to have excellent laboratory animal care because it increases the efficiency and productivity of our search for new knowledge with which to save lives."

Medical investigators who use animals are engaged in a continuing search for better techniques for handling their laboratory animals.

Eleven years ago directors of animal care at a number of medical institutions formed the Animal Care Panel in order to facilitate exchange of information on the best methods of laboratory animal husbandry. Most persons charged with laboratory animal care in the United States now belong to the ACP. They attend its large 3-day annual meetings and comb the quarterly "Animal Care Panel Proceedings" to find ideas that will help them bring the care of their precious charges even nearer perfection.

The American Veterinary Medical Association has established a specialty board for veterinarians who qualify as experts in laboratory animal care. This small and select group is known as the American Board of Laboratory Animal Medicine.

Since 1953, the National Research Council-National Academy of Sciences has had a subdivision, the Institute of Laboratory Animal Resources, devoted to the collection and dissemination of information regarding laboratory animal breeding, shipping, and handling. The Institute has just completed a survey of the organization of laboratory animal care in institutions across the country. The survey also included an inventory of facilities presently used for animal studies.

A committee of the National Society for Medical Research works on suggestions for experimental procedures that will protect laboratory animals against avoidable discomfort. A staff member of the society handles the exchange of information on the design and equiping of animal laboratories. The NSMR supplies laboratories throughout the Nation with large placards of "Principles of Laboratory Animal Care."

The Association of American Medical Colleges, the American Psychological Association, the American Physiological Society, and several other scientific groups have committees concerned with the promotion of better laboratory animal care. In every case there is the dual objective of humanitarianism and scientific efficiency.

In Washington, D.C., several years ago a group of humane society leaders formed a new organization called WARDS, which stands for "welfare of animals used for research in drugs and surgery." The first project of the new group was to collect more than $20,000 toward the building of a fine new animal house at the Georgetown University School of Medicine and Dentistry. The university and the U.S. Government provided the balance.

The WARDS creed is that the relief of suffering through medical science and the relief of suffering through humane works are complementary tasks and that the antivivisection controversies of years past obstructed real progress. The spectacular progress in laboratory animal care that has been made in recent years since the antivivisection cause lost most of its power seems to confirm the idea held by the founders of WARDS.

Says Dr. Hiram E. Essex, of the Mayo Clinic, and president of the National Society for Medical Research: "The threat of abolition of animal experimentation had to be defeated before optimum progress in laboratory animal care could be made. How could the dean of the medical school in a State university, for instance, go before the legislature and ask for funds for good animal care when he was afraid that the very mention of the use of animals in medical studies might lead to the virtual shutting down of some departments of the school?"

Fortunately no medical administrator today need hesitate to ask the best for the animals that are the living subjects for tomorrow's new medicines and new surgery. The contributions of animal research have been too dramatic to be seriously questioned in recent years, and people are learning that even a multimillion-dollar animal house is good economy when it means quicker results in solving problems of life or death.

STATEMENT OF THE AMERICAN DENTAL ASSOCIATION SUBMITTED BY DR. ALFRED E. SMITH, MEMBER, COUNCIL ON LEGISLATION

The American Dental Association favors any reasonable effort to assure that laboratory animals receive humane treatment. The association does not believe, however, that enactment of H.R. 1937 or H.R. 3556 is desirable or necessary.

The association is convinced that at the present time, the overwhelming majority of health research institutions require proper care and treatment of animals. The association is also aware that in dental research institutions, improvements in animal care facilities and in the handling of experimental animals constantly are being made.

No one seriously questions the need for and the obligation of the healing professions to employ animals as well as human beings for the development of methods to relieve human suffering. This is true with respect to research involving oral diseases as well as other diseases. All dental schools and other dental research institutions in the country are engaged to some extent in research involving the use of animals and the benefits to humanity that have and will continue to flow from these efforts are many and varied.

The dedicated scientists who work in health research are motivated with a desire to serve humanity, to relieve and prevent suffering and to prolong life. They have the highest respect for the animals which they must employ in their important experimental work. It is the rule in research institutions that ani-

mals must receive humane treatment. In most dental schools, an infraction of this rule is sufficient reason for instant dismissal of either employee or student. The professions rarely encounter such infractions and when they do occur, the strongest steps are taken to prevent recurrence. Such action is not taken because of the existence of laws but because of purely ethical, humanitarian, and scientific considerations.

The proper care and treatment of animals is of utmost importance to the scientist. The success of his experiments depends in many cases upon his having animals that are in the best of health, and the scientist, therefore, above all others, is aware of the importance of good care and handling of his experimental subjects.

Although there is no question that existing standards and practices relating to the care and treatment of laboratory animals are high, the association is supporting the efforts of the Animal Care Panel to develop a guide for the further improvement of animal facilities and care. This activity by the Animal Care Panel recognizes that there may be a need for standardizing the operation of animal research facilities, and without the prod of legislation, through voluntary action, investigators are completing the development of adequate norms for the housing, feeding, and handling of experimental animals. With support of this type of activity the objectives of H.R. 1937 and H.R. 3556 can be achieved without the cumbersome, costly, and unnecessary regulatory and administrative mechanism which enactment of either bill would entail.

The association believes firmly that enactment of H.R. 1937 or H.R. 3556 actually would impede vital research and drain the already short supply of competent investigators.

In addition to the large and costly administrative agency that would be required to be established in the Department of Health, Education, and Welfare, the bills would require endless recordkeeping and paperwork by the institutions and individuals engaged in health research. This could not help but detract seriously from the important and major job of carrying on health research for the betterment of mankind. Nor is there any assurance that establishment of standards, regulations, and a vast licensing mechanism would prevent the very few and inevitable infractions that now occur. There is also the real and serious question of obtaining the competent personnel necessary to formulate and apply standards, inspect facilities, and determine the qualifications of applicants. At a time when health research personnel are in extremely short supply, where are qualified people to be found? If the program should fall under the control or influence of certain emotional groups now prominent in urging enactment of the legislation, it is not unlikely that health research in this country would be brought to a standstill.

The relief of pain and the prevention and treatment of oral disease, which are the prime responsibilities of the dental profession, require continuing research. Much of that research must be conducted with laboratory animals in order to establish the effectiveness and safety of a new procedure before it is applied to human patients. Fundamental research, preceding the applied research that produce improvements in treatment and prevention, usually requires the use of animals to study the basic structures and the processes that go on in the human body. To deny scientists the freedom to experiment with animals in this connection is to deny mankind the benefits of a healthier and more productive existence.

It should be noted that one effect of enactment of H.R. 3556 would be to halt research in the field of oral diseases. Under section 10(a) of the bill a doctor of dentistry would not even be eligible to receive a letter of qualification to use animals in research. While this exclusion in the bill may be inadvertent, it may also be indicative of a lack of understanding of the health research being conducted in this country.

It is the conclusion of the American Dental Association that enactment of H.R. 1937 or H.R. 3556 would handicap scientific investigation. The legislation would prevent the performance of studies on the control of pain, on healing and on therapeutic measures that may in the long run prove to be of extreme benefit to society. It is based upon the false premise that mistreatment of animals is condoned and practiced by health research workers.

The American Dental Association therefore urges the chairman and members of the committee to reject H.R. 1937 and H.R. 3556.

STATEMENT BY THE AMERICAN PUBLIC HEALTH ASSOCIATION SUBMITTED BY NOBLE J. SWEARINGEN, DIRECTOR, WASHINGTON OFFICE

It is recognized that the health, welfare, and progress of man have been favorably influenced in many ways by vertebrate animals, and that the health and welfare of these friends and benefactors of man should be fostered and that they must be spared any unnecessary pain or fear.

It is specifically recognized that laboratory animals have had an indispensable role in the advancement of the medical and health sciences. Without them the modern knowledge of nutrition, which has benefited animal and man alike, could not have been accumulated. Through their use biological products have been prepared and titrated, the tolerance levels of new drugs have been established, and new surgical procedures have been perfected. Together these advances in medical science are saving millions of lives and much human and animal suffering. These are illustrative of the importance of animals in research.

It is the policy of this association to encourage every practicable improvement in the care and use of laboratory animals. To this end it is emphasized and recommended that:

(1) Animals free of infection and in satisfactory physical and mental condition are necessary for the needs of science. It is therefore the policy of the association to attempt to understand factors that bear on the health and comfort of animals used for experimental purposes and to encourage the maintenance and improvement of these factors where needed in the care and use of such animals.

(2) More critical attention should be directed to the nature of the facilities and the care required for the maintenance of laboratory animals in a healthful environment.

(3) Steps should be taken to collect dependable objective observations on the use of laboratory animals. Prior to consideration of the establishment of any control procedures, the nature of practices warranting control need to be defined by secure data.

If on the basis of assembled objective findings, control procedures are indicated, these should be designed in accordance with the following criteria:

(1) They should be directed specifically to the control of undesirable practices where these are occurring. Blanket procedures affecting predominantly the most dependable users of laboratory animals, e.g., institutions which can qualify for Federal grants, are to be avoided.

(2) The responsibilty and authority for control should be vested in official agencies as close as practicable to the need for control, i.e., in municipal and State rather than Federal agencies. Any such control body should have representation of appropriate professional skills.

(3) Conditions favorable to the advancement of the medical and health sciences as well as conditions which will prevent unnecessary pain and fear in laboratory animals must be maintained. To this end any action which could impose a bureaucratic control over medical research is vigorously opposed.

STATEMENT OF MRS. FRANK ALLEN WEST, REPRESENTING THE TAIL-WAGGERS' CLUB, INC.

I am Mrs. Frank Allen West, a director of the Tail-Waggers' Club, which operates a nonprofit animal clinic, and a member of the District Animal Allocation Board, which licenses metropolitan agencies to receive District pound animals for medical experimentation.

The Tail-Waggers' Club voted to endorse release of these animals for experimentation to obtain legislation providing for inspection and regulation of animal laboratory quarters. Previous to the passage of this ordinance, I had visited the animal quarters of the three local medical schools.

The conditions were shocking due to overcrowding, mesh-bottom cages, too small for animal occupants who were confined for months and sometimes for years with no exercise facilities, and stench due to filth and lack of ventilation. It was not necessary to be a trained observer to realize the needless suffering inflicted by these conditions.

Now, I am happy to report, conditions have been ameliorated. New quarters have been built in all three schools. There are better cages and ventilation and some outside runs have been provided.

Seeing the improvement effected in local schools by legalized regulation and inspection, the directors of the Tail-Waggers' Club at the September 19 meeting, passed the following resolution:

"Be it resolved, that the directors of the Tail-Waggers' Club, endorse H.R. 1937 and urge its speedy enactment, as a means to improve national conditions and appoint Mrs. F. A. West to present the endorsement to the subcommittee conducting the hearing on H.R. 1937."

[Telegram]

NEW HAVEN, CONN., *October 4, 1962.*

Congressman KENNETH ROBERTS,
Washington, D.C.:

The Connecticut Society for Medical Research wishes to go on record as opposed to any State or Federal legislation that proposes to limit, license, and police animal-based research. Advances in medical research made by freemen working in a free society and generously supported by a sympathetic Congress have given to the people of the United States and the rest of the world the means to control many of man's terrible scourges. Further research now in progress promises to extend dramatically the benefits of medical research in the next few years to include the conquest of cancer and heart disease, and the transplantation of healthy organs for sick ones. In addition, man cannot hope to solve the problems of travel through space without animal experimentation first. The advances in medical research already made would not have been possible if the hands of the researcher had been bound by legislation restricting his use of animals.

It is the firm belief of this society that progress in medicine, as in other sciences vital to the survival of man, is directly dependent on unrestricted research by freemen. Our four freedoms would have little chance to survive in a hostile world without a fifth freedom—freedom of research.

JOSEPH DE VITA, V.M.D.,
Executive Secretary, Connecticut Society for Medical Research Inc.

[Telegram]

NEW YORK, N.Y., *September 26, 1962.*

Hon. KENNETH A. ROBERTS,
Committee on Interstate and Foreign Commerce,
House Office Building, Washington, D.C.:

On behalf of the board of directors of the American Heart Association, I wish to place before your subcommittee for its consideration our unanimous expression of opposition to proposed bills H.R. 3556 and H.R. 1937. Although we endorse in principle efforts to safeguard the humane character of animal experimentation, we believe these proposals would in reality hamper progress in biological and medical research by placing unnecessary regulatory impediments in the path of research workers. In place of the current proposals the association urges that Congress encourage use of existing funds for improving animal facilities and care and recognize that the maintenance of standards is properly the function of scientists, their universities, and local and State authorities. Dr. Helen B. Taussig of Johns Hopkins, a vice president of the association, has requested an opportunity to offer testimony in opposition to the proposed measures and we would respectfully hope this will be granted so that she may present our views in greater detail.

SCOTT BUTTERWORTH, M.D.,
President, American Heart Association.

AMERICAN HOSPITAL ASSOCIATION,
Washington, D.C., October 8, 1962.

Hon. KENNETH ROBERTS,
Chairman, Subcommittee on Health and Safety,
U.S. House of Representatives,
Washington, D.C.

DEAR MR. ROBERTS: I wish to present the following comments of the American Hospital Association with respect to H.R. 1937 and H.R. 3556, 87th Congress.

The association is deeply and properly concerned with these bills because of the profound effect of the use of animals on the association's stated objective, "better hospital care for all the people." Animal experimentation is basic to research—much of it done in hospitals—that has produced so many of our great medical advances. Also, large numbers of hospitals depend upon animal tests for proper patient care. While supporting the stated purpose of the legislation, the association joins the vast majority of the scientific community in believing that the bills would materially and adversely affect medical research and hospital care in the United States.

The association supports continued improvement in the care of animals in hospitals and medical laboratories. It believes there has been a steady improvement and that the voluntary accreditation program being developed by the Animal Care Panel will be as successful in this field as the Joint Commission on Accreditation of Hospitals has been in voluntarily improving standards of care in hospitals.

We do recognize the need for constant improvement in animal care as well as in human care. I am attaching an excerpt from the December 16, 1961, issue of Hospitals, Journal of the American Hospital Association which is devoted to the care of research animals in hospital laboratories. The legislation now being considered by the subcommittee, however, can be construed as an indictment of scientists and doctors and the institutions where they work—our universities, our laboratories, and our hospitals. We believe any such condemnation is unjustified.

The association's board of trustees on February 2, 1962, recognized "that it is a responsibility of the States to assure proper treatment of animals used in medical research." This can be done through inspection provisions in so-called pound laws. The laws prohibiting cruelty to animals provide sufficient authority to punish those responsible for inhumane treatment of animals.

The association's board of trustees also said at that time that "if the Federal Government has any responsibility in such matters (treatment of animals), it should be limited to developing acceptable standards through an advisory committee composed of knowledgeable authorities and to recommending such standards to the States for enforcement."

We respectfully suggest that this action by our association proposes a positive program by which the Federal Government would encourage the development of uniformly high standards in the provision of facilities for animals.

We are particularly concerned with the requirement proposed for the filing of a project plan in a form to be prescribed by a Federal administrator. It is our belief that such a proposal would jeopardize the independent research which has done so much good for our people. We join with such groups as the American Medical Association, the Association of American Medical Colleges, the American Association for the Advancement of Science, the National Society for Medical Research, and the American Veterinary Medical Association which are committed to put forth their full efforts in accomplishing the desirable objectives of insuring the proper and humane treatment of experimental and test animals.

We do not feel that the action proposed by the legislation under consideration is needed, and we are fearful that such legislation could impair effective medical research.

We would appreciate your incorporating this statement and the enclosure in the hearings.

Sincerely yours,

KENNETH WILLIAMSON,
Associate Director, American Hospital Association.

Enclosure.

[From Hospitals, Dec. 16, 1961]

Caring for Research Animals in Hospital Laboratories

(By Bennett J. Cohen, D.V.M., Ph. D.[1])

(Hospital research laboratories share a common interest with other medical research institutions in providing the best possible care for laboratory animals, the author states. He discusses present standards requiring professional direction of laboratory facilities and stresses the need for technically competent animal care personnel)

Hospital research laboratories have played an increasingly important role in the national research effort in recent years. This increased participation in research has posed new problems and challenges for hospital administrators. It has become necessary to accommodate activities never before undertaken on a major scale in hospital facilities. One of these important activities is animal experimentation. Some of the essential considerations in planning for the proper use and care of experimental animals are reviewed in this article to assist hospital officials responsible for these programs.

The specialized discipline of laboratory animal care has evolved within the past 15 years.[2] This development is an outgrowth of greatly increased public support of medical research. It also reflects the increasing specialization of research and its tools.

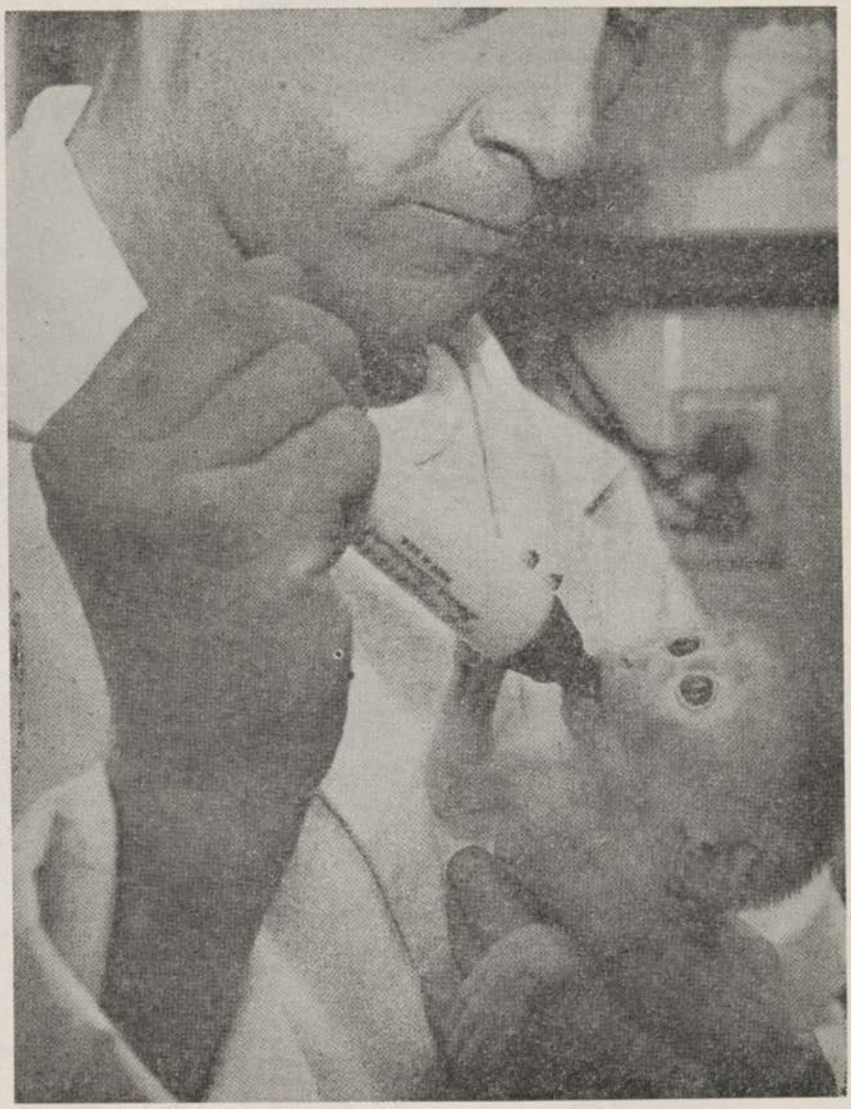
Health disciplines conduct specialized professional activities in accordance with appropriate codes of practice. For example, the "Standards of the Joint Commission on Accreditation of Hospitals," an authoritative reference on proper hospital practices, guide member hospitals of the American Hospital Association.[3] They assure operation of hospitals in the public interest.

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[1] Bennett J. Cohen, D.V.M., Ph. D., is assistant professor of physiology and director of the vivarium, University of California School of Medicine, Los Angeles.

[2] Cohen, B. J., "Organization and Functions of a Medical School Animal Facility," J. Med. Educ. 35 : 24, 1960.

[3] Joint Commission on Accreditation of Hospitals. "Standards for Hospital Accreditation," December 1960.



Laboratory animal technicians need to know the techniques involved in caring for newborn animals, including feeding and handling.

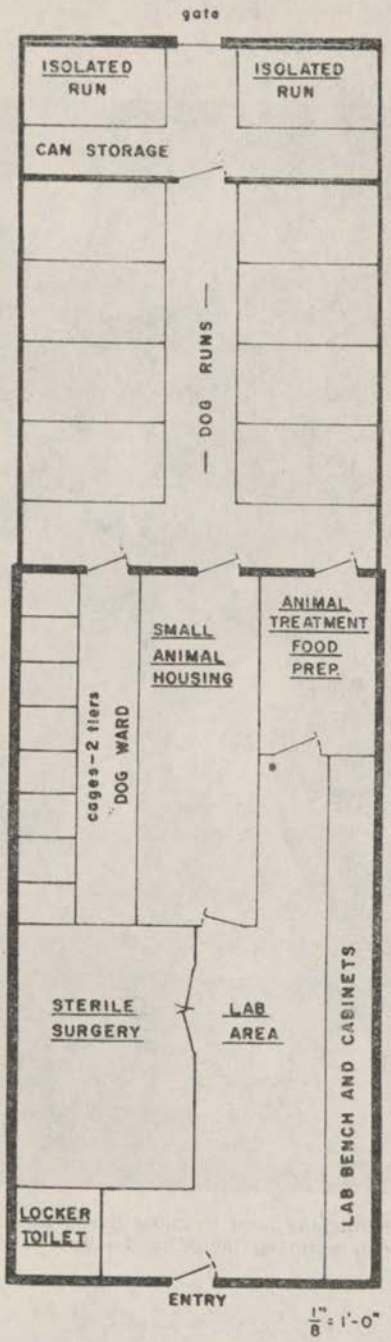
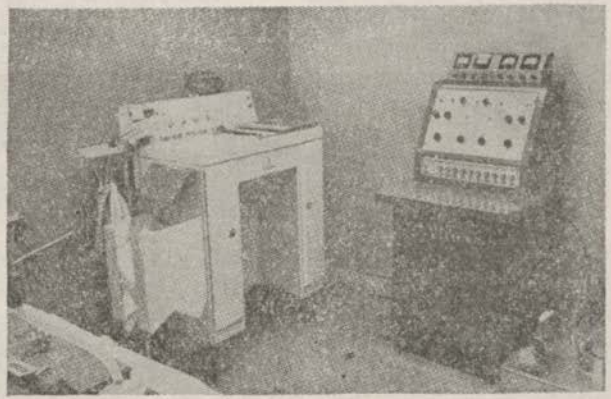
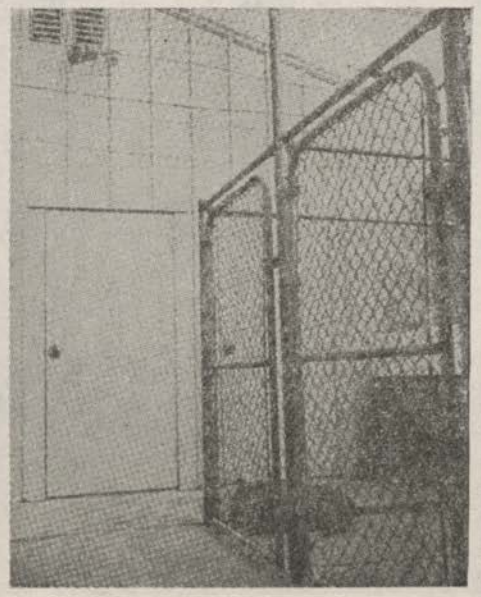


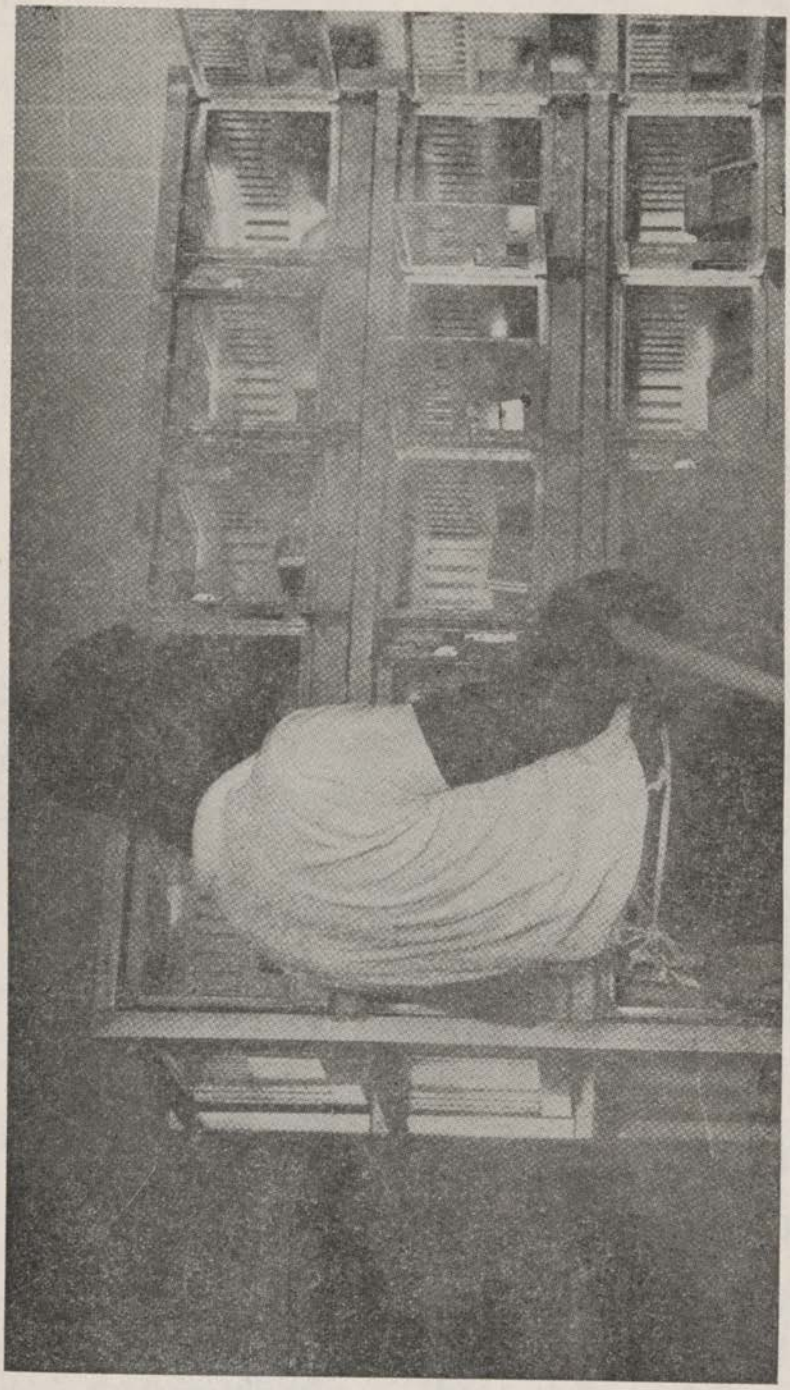
FIGURE 1 (floor plan). Outline diagram of St. Jude's Hospital, Fullerton, Calif., animal facility and research building.

(BELOW) Outside animal runs at St. Jude's Hospital are spacious as well as easy to maintain. Concrete flooring can be hosed down easily. (UPPER RIGHT) A cardioscript machine (left) and a mechanical "heart," the control panel for which is at right, are two of the more complex devices with which the animal research laboratory at St. Jude's Hospital is equipped. (LOWER RIGHT) The research animal care center of the St. Jude's Hospital, Fullerton, Calif., includes a fully equipped biochemistry laboratory.









Facilities for cage cleaning should include a washing machine for smaller cages and steam cleaning equipment for cages and equipment too large for the washing machine.

ANIMAL CARE STANDARDS

Similarly, laboratory animal facilities must operate in accordance with professionally acceptable standards. The Animal Care Panel, the national organization of institutions and individuals in laboratory animal care, currently is developing these standards, based on the following principles:

1. Professionally qualified individuals shall direct the care and management of laboratory animals in research institutions.
2. Animal technicians shall be properly trained in laboratory animal care.
3. Physical facilities and methods of care shall permit housing of animals in a state of well-being and comfort.

A voluntary certification program for laboratory animal facilities based on these standards has been announced [4] and will be in full operation in 1962. It demonstrates that research institutions wish to provide the best possible care for laboratory animals. Research hospitals are an integral part of the scientific community and undoubtedly will participate in this important national program.

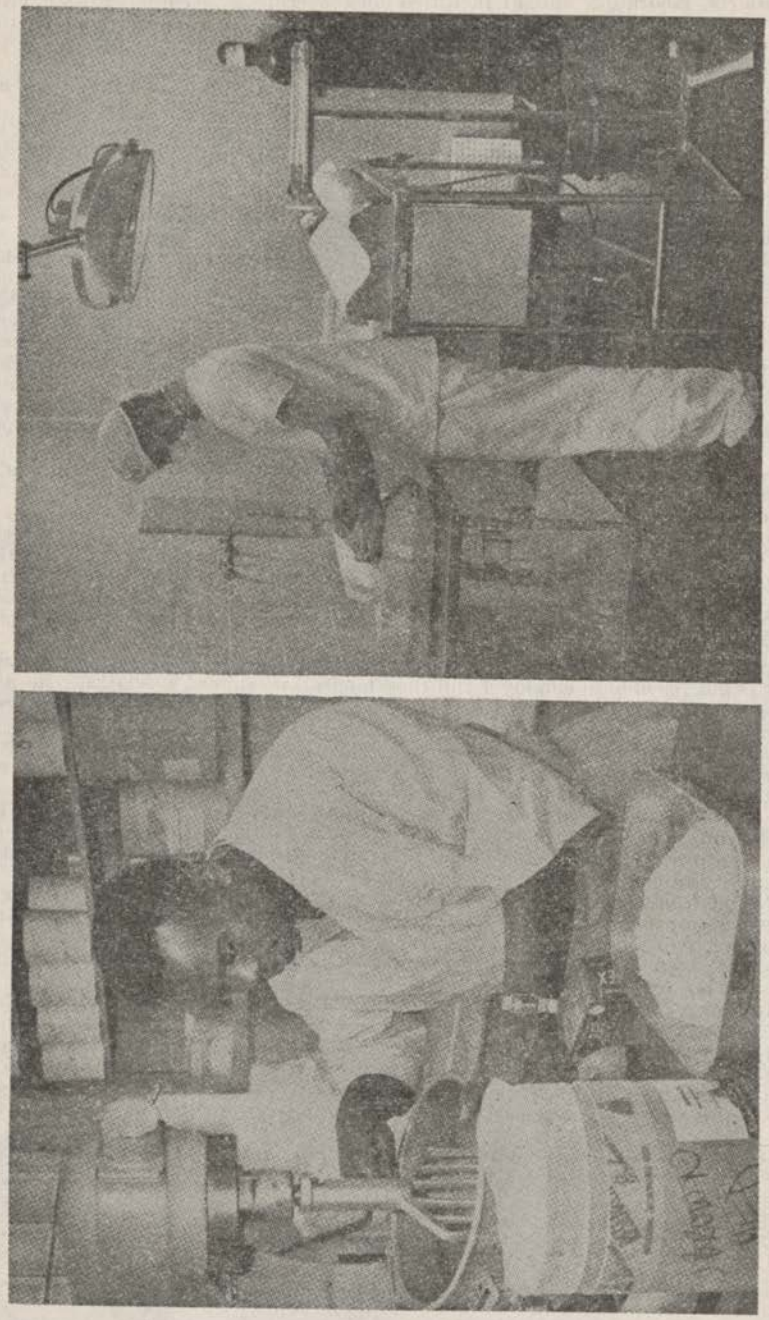
The nature and extent of the direction needed for laboratory animal facilities depend on their size and on the scope of the experimentation programs. Most large institutions, such as medical schools, employ veterinarians with specialized training in laboratory animal medicine.[2,5] The veterinarian is responsible for the professional and administrative management of the facilities. He also provides veterinary services and consultation. As a member of the faculty, he teaches in his area of academic competence and conducts research in a related field.

In some hospitals and affiliated research institutes, the numbers of animals used are sufficiently large enough to justify employment of a full-time laboratory animal specialist. Several Veterans' Administration hospitals, as well as privately supported hospitals, have organized their animal facilities under veterinary direction. As in the medical schools, these positions carry appropriate research or academic status and offer a satisfying professional career opportunity. The American College of Laboratory Animal Medicine [6] maintains a registry of candidates for positions in this field and lists institutions with available positions.

In most hospitals, however, the experimentation programs are modest in size, and it is not feasible to employ a full-time laboratory animal specialist. Nevertheless, a need for professional direction is recognized. This need can be satisfied in several ways:

1. A member of the hospital research staff, a physician or biologist, can serve as director of the animal facility, with a committee to assist him as necessary to determine operating policies. The director obviously should be experienced in the management of animal colonies and in animal experimentation. He must be informed about organization in this field and be familiar with the pertinent literature. The director should provide the leadership necessary to assure high quality animal care.
2. A laboratory animal specialist from a local medical school may be available as a consultant to hospitals having a direct or indirect affiliation with the school. This person can aid the physician or biologist director by defining the requirements for a sound animal care program and by rendering veterinary medical services in connection with specific research projects.
3. In many community hospitals, the dog is used almost exclusively as the experimental animal. The research programs involve surgical procedures and require survival of the experimental subjects. Leading veterinary practitioners in the community have broad experience in the medical management and care of animal surgical patients. Some of them may be in a position to provide professional consultation. The American Animal Hospital Association [7] maintains a

[4] Animal Facilities Certification Program. Proceedings Animal Care Panel, 11, No. 3: x11, 1961; also ibid 11, No. 2; ss, 1961.
[5] Clarkson, T. B., "Graduate and Professional Training in Laboratory Animal Medicine," Washington, D.C. Federation of American Societies for Experimental Biology. In press.
[6] Robert J. Flynn, D.V.M., secretary, Argonne, Ill.
[7] 3920 East Jackson Blvd. Elkhart, Ind.



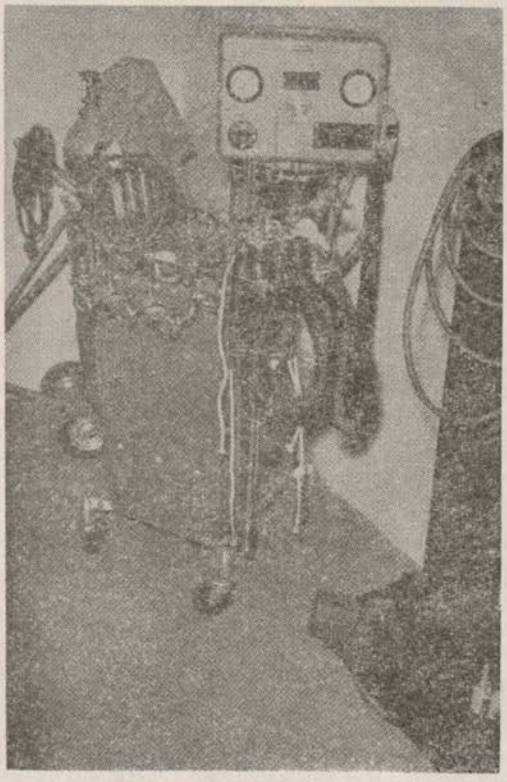
(Left) Compounding synthetic diets to feed laboratory animals is important. Daily supplies are kept in closed containers. (Right) The use of laboratory animals in research also requires a well-equipped surgery similar to a hospital surgical unit.

registry of member hospitals. These hospitals meet the standards of the AAHA, standards which are comparable in many respects to those of the American Hospital Association.

Comfortable housing for experimental animals requires physical facilities and methods of care which permit normal growth and development and the maintenance of animals in good health. The design of animal facilities to provide comfortable housing has been discussed in several recent publications.[8 9 10]

ANIMAL HOUSING

For conventional housing of most mammalian species, extremes of temperature and humidity must be avoided and adequate draft-free ventilation and glare-free lighting is necessary. Generally, in indoor facilities, animal room temperature should be maintained between 72° and 80°F., and relative humidity should be 40 to 60 percent. Ten to fifteen complete air changes per hour (not recirculated) are desirable, and approximately 40 foot-candles of light should be provided. However, these general suggestions may vary considerably, depending on local requirements and specific use of the facilities.



Anesthesia equipment for surgery involving research animals is similar to that used in hospital surgical suites. This piece of equipment is used at the Memorial Hospital of Long Beach.

[8] Thorp, W. T. S., "The Design of Animal Quarters," J. Med. Educ. 35 : 4, 1960.
[9] Barker, E. V., "Design and Construction of Animal Quarters for Medical Education and Research," J. Med. Educ. 35 : 15, 1960.
[10] Thorp, W. T. S., "Space Requirements in the Design of Facilities for the Small Animal Species," Washington, D.C. Federation of American Societies of Experimental Biology. In Press.

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Technical competence to carry out prescribed postoperative care procedures, such as administering drugs and intravenous injections, is another responsibility of the hospital vivarium.

Cleanliness is an essential element in the proper care of animals and is mandatory in laboratory animal facilities. Accordingly, regardless of their size, the facilities should provide for convenient and efficient cleaning and for effective control of vermin, rodents, and other pests. Additional requirements in a complete facility include areas for storage and preparation of animal diets; for sanitary disposal of waste; and for cleaning, washing, and disinfecting of animal cages and equipment. Other mandatory services are the provision of daily care; provision for diagnosis, control and treatment of nonexperimentally induced animal diseases; and if surgery is performed, provision of operative and postoperative facilities appropriate for the species and purposes of the work.

Animal quarters at the Memorial Hospital of Long Beach (Calif.) are in a well lighted room, with cages elevated for ease in cleaning and in feeding the animals.

Two examples will serve to illustrate different types of hospital animal facilities. St. Jude's Hospital, a 120-bed community hospital in Fullerton, Calif., recently constructed a compact 800-square-foot research building, with an additional 600 square feet for outdoor animal runs (see figure 1). The cage room and runs provide for approximately 24 dogs. A separate room is available for housing small animals, or for expanding the dog-housing capacity to 45. The building includes laboratory facilities and an operating room for sterile surgery. A local veterinary practitioner designed this functional facility in conjunction with the hospital staff and serves as its consultant director.[11]

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[11] The laboratory animal facilities of St. Jude's Hospital are described through the courtesy of Frederick P. Sattler, D.V.M., Fullerton, Calif., and Thomas Jones, M.D., director of research.

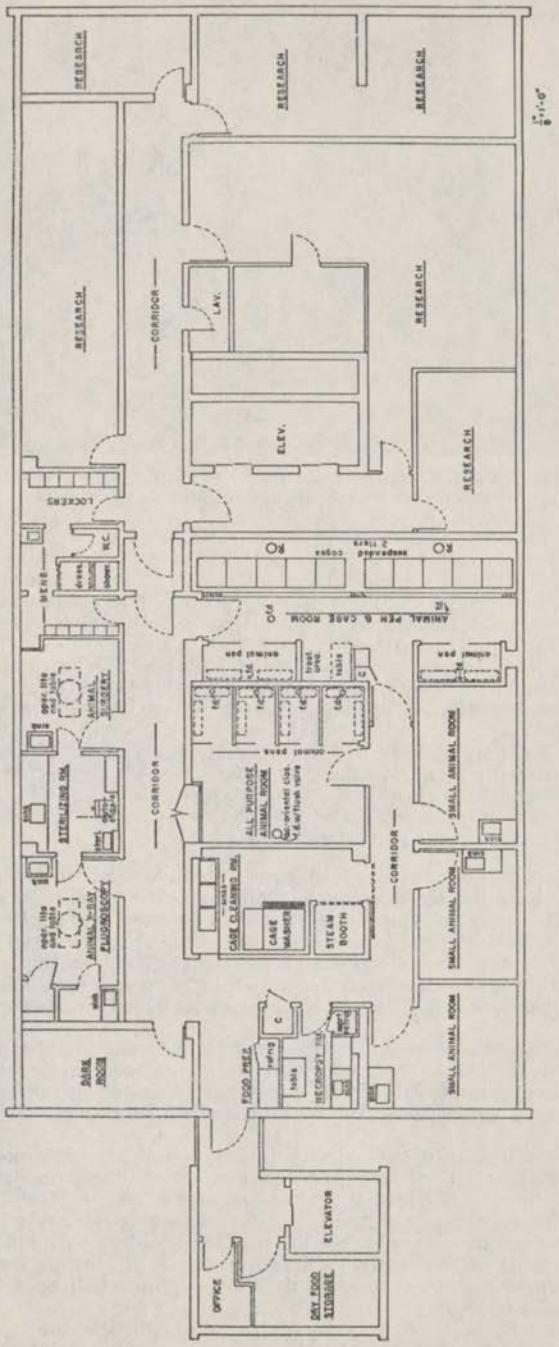
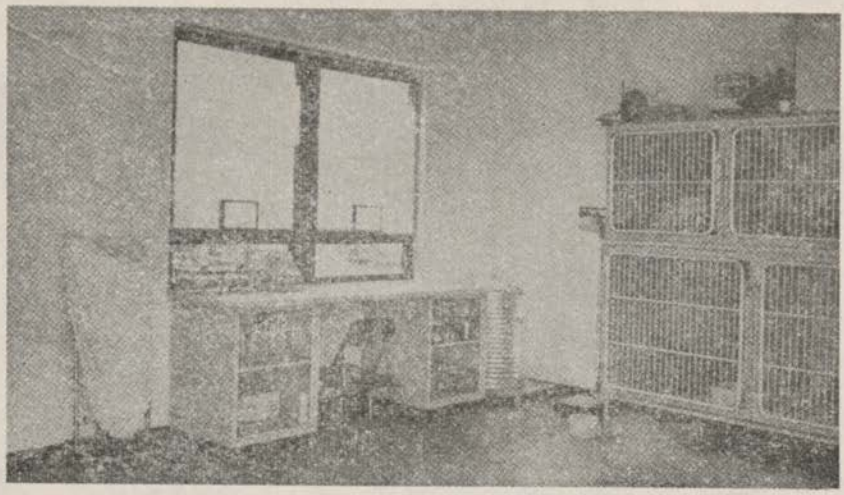


FIGURE 2

Outline diagram of the animal facility at Mount Sinai Hospital, Los Angeles.



Animal quarters at the Memorial Hospital of Long Beach (Calif.) are in a well-lighted room, with cages elevated for ease in cleaning and in feedings the animals.

The animal facility planned for the Halper Clinic Building of the Mt. Sinai Hospital Los Angeles (see fig. 2) illustrates important design considerations in a larger urban facility.[12] The clinic building is a new six-story structure with the top three floors to be devoted exclusively to research. The animal facility is on the sixth floor, occupying approximately 3,000 square feet, which is approximately 20 percent of the total research space in the building.

The animal housing area is physically separated from the laboratory areas by its top floor location and by a double-door entry vestibule from the research space on the same floor. The facility is separately ventilated and air conditioned.

The surgery unit is located adjacent to the animal housing area, with direct access across a corridor to the room housing postsurgical dogs. A shower-locker room is provided for animal technicians and research workers.

FLEXIBLE FACILITIES PROVIDED

The facility provides flexibility in that rooms are provided for both large and small animals. The research programs may require the use of calves, goats, and sheep. Accordingly, pens are provided in an all-purpose room. Most of the time these pens will serve for isolating and conditioning newly received dogs, prior to their transfer to the main dog-housing area. The pens in the largest animal room will provide out-of-cage exercise areas or permanent housing for compatible groups of dogs. A small treatment area is provided for medicating animals.

Facilities in the cage-cleaning room include a washing machine for small animal cages and a steam booth for racks and equipment too large for the machine. The three-compartment sink will serve for cleaning water bottles and as a soaking vat, and will be used for bathing and dipping newly received dogs.

The necropsy laboratory within the animal facility eliminates the need to transport animals to distant laboratories for necropsy. Not shown in figure 2 is a crematory and incinerator for animal carcasses and soiled bedding. This facility is located on the roof, directly accessible via the service elevator.

Only a small food-preparation corner has been planned, since commercially available rations will be used primarily. The main dry food storage room is located adjacent to the service elevator. Daily food supplies will be kept in closed containers in the animal rooms.

The service elevator will be used only for delivery of supplies and animal transport to the research floors below. It will not be accessible to the general public.

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[12] Daniel H. Simmons, M.D., Ph. D., director of research, Mt. Sinai Hospital, Los Angeles, authorized the description of the hospital's animal facilities.

The small office is for the chief animal technician. This office will function as the record center for the facility.

TRAINING TECHNICIANS

The proper care of experimental animals requires skilled, knowledgeable personnel. Animal technicians must understand the basic principles of laboratory animal husbandry and how to apply them. They must acquire skills in humane handling and restraint of animals. They must learn to recognize normal animals and deviations from normal. At a more advanced level, they must have the technical competence to carry out prescribed postoperative care. In short, laboratory animal care requires specific technical skills; it is more than a simple custodial activity.

The director of the animal facility should be familiar with the increasing opportunities for technician training in laboratory animal care. Teaching aids are available for training programs. A list of films related to laboratory animal care has been published,[13] and several technical bulletins for animal technicians are obtainable.[14 15 16] Recently, a correspondence course in laboratory animal care has become available.[17] Local brances of the animal care panel have sponsored formal training courses in several cities. Information about these programs is available from the secretary. The animal technician's certification board has adopted standards of experience and education for certification of junior and senior animal technicians and supervisors. These standards have been published.[18 19]

FINANCIAL CONSIDERATIONS

Grants provide most of the financial support for animal facilities. Research grants from Federal and private sources provide for the purchase and care of animals and for necessary equipment and supplies. Some of the indirect costs may be covered as well. A per diem recharge system commonly is used to pay for animal care in medical schools. However, a single annual assessment against each grant might be a less cumbersome approach in a smaller hospital animal facility. The assessments would vary according to the investigators' use of animals. The true cost of laboratory animal care frequently is underestimated in grant requests, and items such as the cost of sick leave and vacations for employees, depreciation of equipment and maintenance of the facility are not considered. Hospital budget officers should review grant applications with investigators before they are filed to make certain that adequate funds for animal care are provided.

Many institutions, including hospitals, recently have been able to construct research facilities, with the aid of matching funds from the Federal health research facilities program. A unique cooperative effort enabled one medical school to build a new research kennel.[20] WARDS (Welfare of Animals used for Research in Drugs and Surgery) is a Washington, D.C., humane organization dedicated to improving facilities and methods for the care of dogs used in research. With the medical school's assistance, WARDS sponsored a fund-raising campaign. Federal matching funds were made available to complete the financing. The WARDS example shows that the interests of research and animal welfare can be combined to advance both causes. With sound leadership, volunteer groups in other communities could be organized to offer similar assistance to hospitals in need of laboratory animal facilities.

SUMMARY

Hospital research laboratories share a common interest with other medical research institutions in providing the best possible care for laboratory animals.

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[13] Bleicher, N. Films and filmstrips relating to animal care. Proceedings Animal Care Panel. 11:137, 1961.

[14] Care and Management of Laboratory Animals. Washington, D.C., Departments of the Army and the Air Force Technical Bulletin. TB Med. 255, AFP 160–12–3, 1958.

[15] A Practical Guide on the Care of Laboratory Animals. Decatur, Ill. A. E. Staley Mfg. Co., 1958.

[16] Slanetz, C. A. Care of Laboratory Animals. New York, American Public Health Association Subcommittee on Diagnostic Procedures and Reagents, 1954.

[17] Manual for Laboratory Animal Care. St. Louis, Mo., Ralston Purina Co., 1961.

[18] Christensen, L. R. Training in animal care. J. Med. Educ. 35: 45, 1961.

[19] Christensen, L. R. Laboratory Animal Caretaker Training. Washington, D.C. Federation of American Societies of Experimental Biology. In press.

[20] Research kennels at Georgetown, J. A. M.A. 167: 872, 1958.

Present standards require professional direction of laboratory animal facilities, technically competent animal care personnel and physical facilities and methods of care to permit the housing of animals in a state of well-being and comfort. Careful financial planning is essential to assure the necessary funds to meet these standards.

CHICAGO, ILL., *September 27, 1962.*

Representative KENNETH A. ROBERTS,
Chairman Subcommittee on Health and Safety,
House Committee on Interstate and Foreign Commerce,
New Haven Office Building, Washington, D.C.:

I have just been informed that you have scheduled a hearing on the Griffith bill, H.R. 1937. Tomorrow, I want to be heard in opposition of this bill. Griffith bill is patterned after the British law, passed in 1876 when less than 20 scientists were regularly engaged in research employing animals when probably less than $20,000 per year was spent on medical research in Great Britain. It is unreasonable to expect that the British Parliament could write a law 88 years ago that would be suitable for these United States today. British law was passed as result of an antivivisection campaign with the usual false accusation. Griffith bill would place Government restrictions and regulations on research and teaching supported by Government funds. It would place the same Government restrictions on research supported by private funds. If such research was done in institutions that have received or may receive Government funds for construction or remodeling of school buildings in which any research is done, British science has suffered in the volume of research that requires the use of the larger mammals, particularly the dog and cat. Such restriction is shown in the statistics of the British Home Office on the number of these animals used annually. One medical school in this country may use as many dogs and cats in 1 year as were used in 1959 in all of the university laboratories of Great Britain. The antivivisection societies are powerful in Great Britain. British scientists accept the British law to gain protection from the anti-vivisectionists because the law provides that they cannot be prosecuted without obtaining written consent of the Home Secretary in the interest of the future progress of medical, dental, and veterinary research in this country. I trust that your committee will not give favorable consideration to this bill.

A. H. RYAN, M.D.,
President, Illinois Society for Medical Research.

WEBSTER GROVES, MO., *September 27, 1962.*

Congressman KENNETH ROBERTS,
House Office Building, Washington, D.C.:

Respectfully urge your committee to recommend the Moulder bill, H.R. 3556, for passage, and please incorporate this request in the official record.

THE MISSOURI LEAGUE FOR HUMANE PROGRESS, INC.
GRACE CONAHAN, *Executive Secretary.*

HISTORY OF THE BRITISH LAW OF 1876—AN ACT TO AMEND THE LAW RELATING TO CRUELTY TO ANIMALS, SUBMITTED BY ANDREW H. RYAN, M.D., DEAN OF STUDENTS, THE CHICAGO MEDICAL SCHOOL, PRESIDENT, THE ILLINOIS SOCIETY FOR MEDICAL RESEARCH

Within the past 2 years, three bills have been introduced into the Congress, which would place restrictions on investigators who agreed to accept research grants or contracts for research employing vertebrate animals, supported by Government funds. (The bill of Senator Cooper, S. 3570, in 1960 and the bills of Senator Clark, S. 3088, and Representative Griffiths, H.R. 1937, in the present session of Congress.) These bills are patterned after the British law signed by Queen Victoria in 1876.

The British law has had no change except for a further restriction in 1906, which prohibits public pounds from making dogs and cats available for research and teaching, and one in 1912 which provides that Government inspectors may

terminate any experiment by killing an animal thought by the inspector to be suffering pain.

An extensive publicity campaign has been waged in support of these bills in Congress by Mrs. Christine Stevens, president of the Animal Welfare Institute of New York, with the assistance of Maj. C. W. Hume, retired, Signal Corps of England, one of the founders of the Universities Federation for Animal Welfare, which has received financial aid from the Animal Welfare Institute.

The Animal Welfare Institute in supporting these bills has circulated claims that the British law after which these bills are patterned was passed as the result of a need for that law, expressed in a resolution of the British Association for the Advancement of Science in 1871, in response to a petition to the Government by Charles Darwin, Thomas Huxley, and others; and in an earlier bill prepared at the direction of Darwin and Huxley, which was introduced in the House of Commons by Lyon Playfair in 1875.

It will be shown that the resolution of the British association was a simple set of voluntary rules similar to those adopted by professional societies in this country and followed in American institutions; that no petition by Darwin and Huxley was ever presented to the Government; that the bill prepared by Darwin and Huxley was far different from the law that was passed; and that there was no evidence of need in Great Britain for the kind of law that was passed. It will be shown in more detail that those claims are without merit, and have served only to becloud the real issue.

The real issue was the troublesome antivivisectionist movement. It began in the early 1860's as attacks in the London journals upon research workers on the Continent and continued over the years until 1874–75 when British physiologists became the objects of the attacks which increased greatly in number. This movement in fact marked the birth of organized fund-raising antivivisection societies which spread to this country in 1883.

The passage of the British law was the result of an antivivisectionists' campaign, the like of which has not been seen in this country or elsewhere. The key figures in this campaign were R. H. Hutton, joint editor of the National Review, and the Economist and the Spectator, who was an outspoken, militant antivivisectionist, who reached the masses through his journals; and Miss Frances Power Cobbe, who posed as being more moderate, seeking only restrictions rather than suppression of animal experimentation. Miss Cobbe cultivated the upper class. By meeting the right people, she succeeded in gaining the interest of the Royal Society for the Prevention of Cruelty to Animals, whose membership included British nobility. This society has never before been interested in vivisection. The publicity (see later) resulting from the mere fact that she was given an audience by this society, gave stature to the antivivisectionists and intensified their activities. Their role in the campaign will be discussed in more detail presently.

EARLY ANTIVIVISECTIONIST ACTIVITY

Agitation of antivivisectionists against scientists on the Continent preceded the British movement by several years due to the fact that the growth of research activity on the Continent preceded that in England. Distorted accounts of research experiments on the Continent were recorded in the London press.

To cite an example, Moritz Schiff (1823–96) relinquished a professorship at Bern to accept a chair in physiology at Florence in 1873 and left Florence in 1876 to teach in Genoa (Castiglioni). Professor Schiff had scarcely settled in his new chair at Florence when he encountered an antivivisectionist campaign which continued unabated until his departure in 1876. His experience at Florence is particularly pertinent for two reasons. Participating in his persecution were English residents of Florence and Frances Power Cobbe, whose role in the passage of the British legislation will receive further comment. I quote from Miss Cobbe's account of the Schiff affair recorded in the transactions of her own society founded in 1875.

Transactions of the Victoria Street Society, dated 1880:

"November 1863: Professor Schiff's cruelty discussed at the afternoon reception at Villa on Bellosquardo, 700 signatures headed by Mrs. Somerville's and those of nearly all of the old noblesse of Florence and English residents."

"December 1863: Memorial presented—treated with contempt by Schiff in Nazione."

"December 29: Challenge by Schiff in Nazione to Daily News correspondent at Florence to come forward and prove facts mentioned in letter."

"December 30: The correspondent (Miss Cobbe) sent to the office of Nazione, her name and address, also testimony. Nazione refused to publish same even as a paid advertisement. Agitation in Florence taken up by Countess Baldelli and maintained until the retreat of Schiff in Genoa—1877."

RESOLUTION OF BRITISH ASSOCIATION FOR ADVANCEMENT OF SCIENCE, 1871

The darkening cloud of antivivisectionist activity against scientists on the Continent, which appeared in the British journals, may have been a factor in the formulation of the set of rules adopted by this association in 1871. In the previous year Huxley, then president of the association, had been violently attacked for speaking in defense of Brown Sequard, a French physiologist; but, as yet, no accusations had been made against Britist scientists. There were less than a dozen and a half physiologists in Great Britain using animals in research (see later testimony), and the first publication of the British Journal of Physiology did not appear until 7 years later. The resolution of the British Association for the Advancement of Science was a statement of voluntary rules governing the use of anesthetics in experiments that inflict pain, and provision that experiments be performed only in acceptable laboratories with adequate facilities and proper supervision and responsibility. A similar set of rules was adopted by the American Medical Association in 1908 and is followed in this country. To read into these resolutions a plea by the British Association for the Advancement of Science or by the American Medical Association for government supervision, restriction, and policing of medical research is clearly wishful thinking.

Concerning the passage of the British law of 1876, I shall list for reference a chronological series of the events preceding its passage:

1874–76: Antivivisectionist campaign intensified.

January 26, 1875: Deputation to the Royal Society for the Prevention of Cruelty to Animals.

May 4, 1875: Lord Hennicker introduced a bill in the House of Lords.

May 12, 1875: Lyon Playfair introduced a bill in the House of Commons.

June 15, 1875: Queen Victoria's letter to Dr. Joseph Lister, later Lord Lister.

June 22, 1875: Royal Commission appointed.

November, 1875: Victoria Street Society founded by Frances Power Cobbe.

January 8, 1876: Report of Royal Commission.

May 22, 1876: Bill introduced in House of Lords.

August 9, 1876: Second reading of bill in House of Commons.

August 15, 1876: Royal signature (Act. 39 and 40, Vict. C–77).

1906: Second Royal Commission on vivisection appointed to inquire into the law relating to its practice and administration and to report whether any, and if so what changes were desirable.

Having disposed of the resolution of the British Association for the Advancement of Science, the position taken by Darwin and Huxley will be unfolded in the course of events that followed.

ANTIVIVISECTION CAMPAIGN

A few references only will be cited because of limited space.

London Times, December 10, 1874: "Vivisection—Yesterday at the Norwich police court, some proceedings of considerable interest to the medical profession were instituted at the instance of the Royal Society for the Prevention of Cruelty to Animals against Eugene Mangan of Paris; Mr. Haynes Robinson, surgeon of Norwich; Mr. J. B. Pitt, surgeon of Norwich, and Mr. Wentworth While, surgeon of Norwich, for having as the prosecution alleged, tortured two dogs at the meeting of the British Medical Association in August last." (Referred to later.)

London Times, February 24, 1875: Advertisement, Society for the Abolition of Vivisection. Communicate with George R. Jesse, Esq., Henbury, Macclesfield, Cheshire.

London Times, March 31, 1875: "The Glasgow Society for the Prevention of Cruelty to Animals was honored by an unusually large and influential meeting. The report showed that the income for 1874 tripled that received during the preceding year; then, as regards the question of vivisection, which has lately been keenly debated in several London journals, a petition to Parliament in favor of a bill to impose restrictions on the practice of vivisection was unanimously adopted. Glasgow Herald."

Spectator, May 15, 1875: Letter from Lady Burdette-Coutts, "Humanity in Schools—In Florence, the calculation has been made that 14,000 dogs have been cut up alive, exquisite, sentiment organs mangled, sometimes even deprived of the power of giving expression to nature's agony ere they passed into the valley of death, the last list of victims including a poor little puppy."

London Times, August 2, 1875: Advertisement, Society for the Abolition of Vivisection. "The nation is appealed to for immediate aid and subscriptions urgently needed to obtain evidence for the Royal Commission. Subscriptions may be sent to the National Provincial Bank of England."

Also two advertisements in this issue of Times, one for persons able to give testimony of the practice of dissection on living animals and the second offering 20 pounds reward for obtaining conviction.

March 2, 1876: First meeting of Irish Antivivisection Society, honorary secretary, Miss A. M. Swifte.

March 1876: Scottish Society for Suppression of Vivisection founded.

June 10, 1876: London Antivivisection Society inaugurated (offices, 180 Brompton Road).

June 21, 1876: International Association for the Total Suppression of Vivisection inaugurated (offices, 25 Cockspur Street). Later affiliated with Victoria Street Society.

Testimony before the Second Royal Commission, July 24, 1907: The Right Honorable Sir John Fletcher Moulton, member of the Privy Council, fellow of the Royal Society and lord justice of appeal testified: "I remember, and I think the chairman of the Commission probably remembers, how in the seventies the walls of London were placarded with a poster representing a rabbit in the process of being roasted alive. The poster was absolutely false, yet the placard was all over London."

London Times, August 10, 1876: The following is a list of petitions presented to the House of Commons against vivisection during the present session up to August 1; in favor of total suppression 805, number of signatures 146,889; in favor of restriction 15; number of signatures 1,520.

If further evidence of the antivivisection threat to research at that time in Great Britain is needed, it is found written into the British law of 1876 as follows: "A prosecution under this act against a licensed person shall not be instituted except with the assent in writing of the Secretary of State."

The effective machinery needed to obtain legal action was, however, set into motion by Frances Power Cobbe through a master stroke of strategy.

THE KEY STRATEGY

To Frances Power Cobbe (1822 to 1907) is largely due the strategy which led to the appointment of the Royal Commission of 1875. Miss Cobbe, who never married, was a well-educated woman of means provided through an inheritance, supplemented by an income from her writings on various topics for several magazines and the Daily News. By meeting some of the right people, she was able to interest the Royal Society for the Prevention of Cruelty to Animals. This was an old, very wealthy and powerful society, which included in its membership as honorary vice presidents many members of the House of Lords. Its activity had been directed toward such matters as obtaining legislation dealing with the treatment of horses and in the prevention of the use of dogs as dray animals. It had never concerned itself with the use of animals for research. To this society Miss Cobbe posed as a moderate.

Miss Cobbe first succeeded in having this society bring suit, under existing law, in December 1874, in Norwich against the French scientist, Mr. Mangan, who gave a demonstration before the British Medical Association at their August meeting in Norwich of the effects of intravenous injections of alcohol and absinthe on two dogs. The action also included four physicians, who witnessed the demonstration. Mr. Mangan could not be served because he had returned to France, and the case against the four physicians was dismissed. The account of this action, however, reached the press.

Meanwhile, Miss Cobbe prepared a memorial. It was directed not against suppression of vivisection but rather its restriction. With the support of the Countess of Minto and other influential persons, she succeeded in presenting this memorial to the Royal Society for the Prevention of Cruelty to Animals. The name of Charles Darwin appeared as one of the signers of the memorial, but he is on record as not subscribing to it. The event, with its pomp, was duly recorded

in the press—a masterpiece of publicity. The following abstract recorded the event and also her position on the issues at that time.

London Times, January 26, 1875: "A deputation waited yesterday afternoon on the Royal Society for the Prevention of Cruelty to Animals at their instruction in Jermyn Street to present a memorial to the society on the subject of vivisection. The memorial was signed by a great number of persons, many of considerable rank and influence." It must, however, be mentioned that several eminent names appear on the list of those who were not disposed to agree with the Bishop of Norwich, Lord Houghton, Sir William Gull, Sir Henry Maine, Sir Moses Montefiore and Messrs. Charles Darwin, Matthew Arnold, and Seymour Haden. The deputation consisted of the dowager, Lady Stanley of Alderly, the Countess of Minto, Miss Cobbe (to whose exertions the numerous list of signatures is in a great measure owing), Lord Josceline Percy * * *.

"The deputation was received by a number of ladies and gentlemen on the committee of the society. His Imperial Highness Lucian Bonaparte occupied the chair at the commencement of the proceedings but resigned it on the entrance of the Earl of Harowby to that nobleman who had been prevented from the hearing earlier."

"The memorial was read by Mr. John Locke. It was directed against not so much the suppression as the restriction of vivisection and commented on the enormous extension of the practice in recent years.

"It was, therefore, urged by the memorialists that the society should at once undertake the adoption of such measures as might approve themselves to their judgment as most conducive to the promotion of the end in view, namely, the restriction of vivisection, and the following were suggested as being perhaps the most likely measures to attain the desired ends:

"By the appointment of a Subcommittee for the Restriction of Vivisection,"

"By instructing Mr. Colan to undertake as many prosecutions of cases vivisection involving severe animal suffering as may prove to come within the scope of the existing law.

"If a bill on the subject were found advisable, it might properly contain other provisions such as the prohibition of all painful experiments on animals except in authorized laboratories and by registered persons whose experiments should also be registered as to number, nature and purpose.

"The absolute prohibition of all painful experiments as illustrations of lectures.

"All the provisions for such an act would, of course, be carefully weighed by Parliament in debate; and while physiologists would contend for such liberty as might be enabled to justify to the conscience of the nation, the Society would endeavor to obtain security against its abuse."

In closing, Lady Burdette-Coutts remarked, "The practice of vivisection was a great and growing evil and it was, in her opinion, terrible to think that the young generation should be brought up, as under such tuition they infallibly would be brought up, to an insensibility of the feeling of their fellow creatures."

Miss Cobbe was clever, unscrupulous, and in a hurry. She did not wait for the Royal Society for the Prevention of Cruelty to Animals to act. Although posing to them as a moderate in January, she later claimed credit for the bill introduced 3 months later by Lord Hennicker, although Mr. Hutton, the antivivisectionist, was given credit in the press for having prepared the bill. The two accounts of the matter follow:

British Medical Journal, May 8, 1875; "Lord Hennicker has brought into the House of Lords Mr. Hutton's bill, which is in the main prohibition of experiments and destruction of physiological research."

Transactions of the Victoria Street Society, 1880: "May 4, 1875, bill regulating vivisection prepared at Miss Cobbe's request by Sir Frederick Elliott, revised by Lord Coleridge, and introduced into the House of Lords by Lord Hennicker."

Miss Cobbe apparently played a double role throughout her campaign. She first involved the Royal Society for the Prevention of Cruelty by posing as a moderate. But, as soon as the royal commission had made its report, she attempted, through Lord Shaftesbury, to have an antivivisection bill passed in the House of Lords. Failing that, she next tried to have such amendments made in the bill in the House of Commons but failed. The bill that passed actually provided the restrictions on research recommended by her in the memorial which she presented to the Royal Society for the Prevention of Cruelty to Animals. But this apparently had been planned only as the first step toward her final objective to obtain complete suppression of vivisection. This objective was recorded 3 months after the passage of the British act as follows:

"October 18, 1876, Committee of Victoria Street Society placed on minutes a letter of Miss Cobbe intimating that she could only retain office of honorary secretary should the committee see fit to adopt the principle of total abolition, or at least a more uncompromising hostility to vivisection."

Dedicated to this objective, she supported a bill introduced by Lord Truro in the House of Lords, July 1879; and another in the House of Commons in 1881 by J. F. B. Firth, Esq., providing that: "It shall not be lawful to subject any live animal to vivisection; that is to say, to perform on any live animal, any experiment for any medical, physiological, or other scientific purpose * * * providing penalties of imprisonment not to exceed 3 months." Miss Cobbe continued her antivivisectionist campaign until her death.

THE ROLE OF DARWIN AND HUXLEY

The claim is made by the Animal Welfare Institute that Darwin and Huxley played a prominent role in the passage of the British law. What are the facts? Darwin is quoted as having written Ray Lankester (May 22, 1871), that vivisection was a subject that made him sick with horror, and that he felt compelled to publish a rebuttal of the antivivisectionists' sweeping allegations. Note that that was in 1871 when the antivivisectionists' allegations were directed against scientists on the Continent teaching practices at the veterinary school near Paris, accounts of which he had read in the press—not allegations concerning British investigator. Note also that his publication was a rebuttal. By 1875, the antivivisection campaign had shifted to England and was reaching such magnitude as to pose a threat to British scientists. What then did Darwin actually do?

Based on a press release from the Animal Welfare Institute, we find the following statement in the public press:

The Washington Post, June 6, 1960:

"Nearly a century ago, in response to a petition to the Government by Charles Darwin, Thomas Huxley, Edward Jenner, and some other distinguished scientists, Great Britain adopted legislation designed to prevent the infliction of needless suffering upon animals used in laboratories for research purposes."

This statement is absolutely false. Darwin and Huxley and Burton Sanderson considered preparing a petition, but, according to Darwin's own statement, it was never presented to the Government.

There is a recorded version of this contemplated "petition," as follows:

British Medical Journal, April 24, 1875: "The Athaeneum states what has long been known in the profession that, in the event of any proposal for legislation with regard to vivisection brought forward, Mr. Darwin, Professor Huxley, Dr. Sanderson, and other biologists of distinction intend to petition Parliament on the subject. While they are anxious that any useless cruelty should be prevented, they are extremely desirous that no obstacle should be placed by the action of the legislature on research, and that these views be embodied in the petition."

Darwin and Huxley, instead, collaborated in preparing a bill which was introduced in the House of Commons by Lyon Playfair on May 12, 1875, 1 week after the introduction of Lord Hennicker's bill in the House of Lords.

What restrictions did Darwin and Huxley propose to place upon British scientists? The answer is to be found in the comments made on the bill by Mr. Holt, the editor of the Spectator.

Spectator, May 15, 1875: "On Wednesday last, Dr. Lyon Playfair laid on the table of the House of Commons a bill for the restriction of vivisection (drawn up by physiologists) is the best answer possible to the ignorant attack made in a daily contemporary on Thursday on Lord Hennicker's bill introduced in the House of Lords." "Dr. Playfair's bill leaves all experiments conducted under anesthetics as utterly without restriction as they now are; indeed it attempts no sort of limitation on them." "Dr. Playfair allows any man who pleases to try any experiment he pleases, on animal life, without let or hindrance so long as he gives the poor creature on which he experiments, or professes to give them, anesthetics." "Though it denounces as illegal the infliction of pain for the purpose of science by anyone, except under the strictest conditions of responsibility, it not only takes no pains to prevent the breach of the law, but gives no power to investigate breaches of the law."

Darwin's position at the time is best stated in a letter dated April 14, 1881, written to Professor Holmgren, of Upsala, from which I quote: "Several years ago, when the agitation against physiologists commenced in England, it was

asserted that inhumanity was here practiced, and useless suffering caused to animals; and I was led to think that it might be advisable to have an act of Parliament on the subject. I then took an active part in trying to get a bill passed, such as would have removed all just cause of complaint, and at the same time have left physiologists free to pursue their research—a bill very different from the act which has since been passed. It is right to add that the investigation of the matter by a royal commission proved that the accusations made against our English physiologists were false" ("Life and Letters of Charles Darwin," vol. 2, p. 382, 18 Appleton, New York, 1897).

The letter, with Darwin's permission, was published in the Times, April 18, 1881, which was attacked on the following day in a letter in the Times headed, "Mr. Darwin and Vivisection" signed by Frances Power Cobbe.

As for Huxley, it has been claimed that by having signed the report of the royal commission, he could be considered to have supported the British act. As opposed to this contention, I quote from "Life and Letters of Darwin" (vol. 2, p. 379): "It cannot be denied that framers of this bill, yielding to the unreasonable clamor of the public, went far beyond the recommendations of the royal commission."

ROYAL COMMISSION

On advice of Disraeli's government, both the bills of Lord Hennicker and Lyon Playfair were withdrawn and a royal commission was appointed.

London Times, June 28, 1875: "Royal commission composed of Lord Cardwell, Lord Wimmarleigh, Mr. Forster, Sir John Karslake, Professor Huxley, and Mr. Erichsen and Mr. Hutton * * *. The composition of this commission leaves little to be desired. Lords Cardwell and Wimmarleigh and Mr. Forster will command the confidence of the public and are not likely to allow their minds to be diverted from the real questions which are at issue. Sir John Karslake will bring the experience of a trained advocate to the elucidation of facts and the sifting of evidence. Mr. Erichsen and Professor Huxley will adequately represent the requirements of medical education and of natural science, and the presence of Mr. Hutton will insure that none of the statements or arguments on which the recent opposition to vivisection has been founded will be left out of the account. Perhaps it would have been better if the weight of so very earnest a partisan had been counterbalanced by that of a practical physiologist accustomed to perform experiments of the class referred to; but there can be no doubt that the views which persons of this class entertain will be fully set forth in the shape of evidence. * * *"

The royal commission of 1875 sat for almost 6 months, and asked 6,551 questions of 53 witnesses. They heard of the *Norwich* case, 1874, in which action was instituted against a French pharmacologist who had given a demonstration using two dogs before the British Medical Association. They heard the "callous" testimony of a Mr. Klein, not an Englishman and without a perfect command of the English language, who said that anesthetics were used by him to keep dogs from howling and to keep them quiet. But they did not hear a single witness who testified of knowledge of any case of cruelty to animals. The report of the royal commission was dated January 8, 1876.

In summary, to quote Lord Sherbrooke in Contemporary Reviews, October 1876:

"The commission entirely acquitted the English physiologists on the charge of cruelty. They pronounced a well-merited eulogism on the humanity of the medical profession of England. They pointed out that medical students were extremely sensitive to the infliction of pain upon animals, and that the feeling of the public at large was penetrated by the same sentiment. They then proceeded to consider to what restrictions they should subject the humane and excellent persons in whose favor they had so decidedly reported. Their proceeding was very singular. They acquitted the accused, and sentenced them to be under the surveillance of the police for life."

LORD CARNARVON'S BILL

London Times, May 23, 1876: "The bill to restrain the practice of vivisection was yesterday introduced by Lord Carnarvon in the House of Lords."

London Times, June 16, 1876: "A large deputation of eminent medical men waited on Lord Carnarvon in protest against the bill. The deputation represented the British Medical Association body of between 6,000 and 7,000 members." Quoting Lord Carnarvon in reply to the delegation: "The royal commission was

held and its report affirmed in the most distinct manner, that, so far from vivisection being carried out by hundreds of persons daily, not more than 15 or 20 persons were engaged in the systematic pursuit of physiology in this country. * * * On the one hand there is the view of those who are interested in the service of medicine and in the researches of physiology and on the other hand that held by a numerous mass of people in this country."

The bill was passed in the House of Lords and was sent to the House of Commons. The following extract gives an account of the debate.

London Times, August 10, 1876 (4½ columns from which a few extracts are quoted) :

"The animal cruelty bill was read a second time in the House of Commons. Mr. Cross, the Home Secretary, in moving the second reading of the bill, stated that they lived now as had been well said in an age of progress and probably in no intellectual pursuit had greater progress been made than in medical science and inquiry." "The secretary of the Society for the Prevention of Cruelty to Animals heartily acknowledged that he did not know of a single case in which anesthetics had not been used." (Note that Mr. Colan, the secretary of the Royal Society for the Prevention of Cruelty to Animals had been instructed by his society in January 1875 to undertake as many prosecutions of cases of vivisection (involving severe animal suffering) as may come within the scope of the existing law.)

"Mr. Colan, the secretary of the Society for the Prevention of Cruelty to Animals had told the commission that in the whole course of his inquiry he had met with only one instance of a case of vivisection performed by a student."

"Sir George Duckett, the president of the Society for the Abolition of Vivisection tells us that medical science has arrived at its extreme limits and has little to learn."

"Dr. Ward who had placed on the paper a motion for rejection of the bill said the main objection to vivisection had been based upon statements as to the practice of foreign physiologists, but unsupported by evidence."

"In point of strict argument Mr. Lowe's speech against the bill was unanswerable. But the Government and the medical profession are under the necessity of doing something to satisfy the very vehement sentiment upon the subject; and Mr. Cross very prudently treated the proposal as one which simply asked the medical profession to give a statutory guarantee for their observance of conditions under which, as a matter of fact, they have in this country always performed their experiments. It is better for physiologists to submit once and for all to some restrictions, provided the value of their experiments is not materially curtailed, than that they should be liable year by year to the persecutions and interruptions to which they have during the last few months been subjected."

"Nevertheless, it is only due to the doctors against whom the regulations of the bill are directed to say that the whole sympathy of all reasonable persons must be on their side in the dispute."

"But it is often Mr. Lowe's misfortune to be too reasonable; and Mr. Cross appealed with some skill to the resolutions respecting vivisection which were passed in 1871 by men of science themselves at a meeting of the British association. They laid down the rules that no experiment which could be performed under the influence of anesthetics should be otherwise performed—that those resolutions should have been passed 5 years ago may well, indeed, as Mr. Cross admitted, be held to show that the present legislation is wholly unnecessary; but they may also be considered to show that, except for the gratuitous insult which has been inflicted on a great profession, it is comparatively harmless."

The evidence clearly shows that there was no need for the kind of law passed in Great Britain in 1876. It was written in an era in which Parliament knew very little, as the evidence shows, about research, its requirements and its promise. Is it conceivable then that a British Parliament sitting in 1876 could have had the wisdom to pass a law suitable for America today? Nevertheless, it is proposed that we accept the decision of that Parliament by enacting a law patterned after the British act of 1876.

The influence that Queen Victoria may have had on the passage of the British law is not clear. The Queen did express her views in a personal letter to Dr. Joseph Lister (later Lord Lister), who had waited on her as her physician in 1871. She wrote Dr. Lister as follows:

"BALMORAL, *June 15, 1875.*

"DEAR SIR: You are no doubt aware that a royal commission is about to inquire into the subject of vivisection, but some time must elapse before any legislation is attempted.

"In the meanwhile it is to be feared that the unnecessary and horrible cruelties which have been perpetrated will continue to be inflicted on the lower animals.

"The Queen has been dreadfully shocked at the details of some of these practices, and is most anxious to put a stop to them.

"But she feels that no amount of legislation will effect this object so completely as an expression of opinion on the part of some of the leading men of science who have been accused, she is sure unjustly, of encouraging students to experiment on dumb creatures (many of them man's faithful friends and to whom we owe so much of our comfort and pleasure) as a part of the regular education course.

"The Queen therefore appeals to you to make some public declaration in condemnation of these horrible practices, and she feels convinced that you will be supported by many other eminent physiologists in thus vindicating the medical profession and relieving it from the accusation of sanctioning such proceedings.

"Yours faithfully,

"HENRY F. PONSONBY."

Dr. Lister's long letter in reply closed the following statement:

"I am therefore clearly of opinion that legislation on this subject is wholly uncalled for; while any attempts of that kind might prove very injurious by checking inquiries calculated to promote the best interests of Her Majesty's subjects." (Lord Lister by Sir Rickman Godlee, Macmillan, London 1918.)

The Queen's letter to Lord Lister was written 1 month after the publication in the Spectator (see above) of that emotional, irresponsible letter of Lady Burdette-Coutts concerning vivisection in Florence. There is no evidence that the Queen's views were publicized, but it is likely that her views were known to Members of the House of Lords. The Queen's views may then have had some influence on the recommendation of the royal commission, which indeed were made after finding no evidence to justify such recommendations. Her view may have had some influence on the surprising sensitivity of Lord Carnarvon to "the view held by a numerous mass of people of this country," as stated by him in his interview with members of the medical profession who waited on him in opposition to his bill. The House of Lords had been insensitive for many years to the demands of the public for suffrage; at that time a considerable proportion of the male population did not enjoy the right to vote. It would appear that the public could be granted consideration on the vivisection issues, a matter that seemed of minor importance to the House of Lords in the affairs of Her Majesty's Government.

The law did not satisfy the antivivisectionists. At the hearing of the Second Royal Commission appointed in 1906 to examine into the operation of the British law, 18 antivivisectionist societies were heard in opposition to the existing law.

In 1906 a dog bill was passed through a surprise parliamentary maneuver prohibiting the police from giving or selling stray or unwanted dogs for vivisection. This placed a further restriction in the British law and this provision has also been applied to cats. The law thus denies scientists a source of stray dogs and cats in London, where they are sacrificed at the public pounds, presumably without anesthetics. While the laboratories which have sufficient funds must purchase them from dealers often as far distant as 250 miles (personal correspondence), laboratories without such financial resources must do without them.

In 1921 a dog's protection bill was introduced which sought to make illegal the use of dogs for experimental purposes but was defeated. The same bill was reintroduced in 1927, backed by a monster petition organized by several antivivisection societies, said to contain over a million signatures. Fifty learned scientists were heard in opposition to the bill which failed to pass. But the bill kept coming back in 1933, 1937, and 1938. And today the antivivisectionists are still active. Such harassment is certainly not a favorable climate for research.

The claim has been made that British scientists are satisfied with the law, since no serious effort has been made by them to either repeal or amend the law. They have considered the advisability of attempting to obtain changes, but there is one reason that is sufficient to explain their failure to do so.

One does not have a bill introduced into a legislative assembly unless there is a remote possibility of its passage. If there exists an organized group whose strength is likely to be sufficient to defeat such a bill, it is better not to introduce it because its defeat would serve only to increase the strength of the opposition. The convincing argument against the possible success of obtaining a change in the British law has been the strength of the antivivisectionists. By continually seeking more restrictive legislation, the antivivisectionists have kept British scientists on the defensive.

The Research Defense Society was founded by the scientists in 1908. The following extract is quoted from a pamphlet issued by this society in 1957; in 1938 after the defeat of a dog's protection bill for the fourth time in the preceding 18 years, "This was the first time the question of amending the Dog's Act of 1906 was seriously considered. It was brought up at this time and on many subsequent occasions, but even the extreme exigencies of wartime conditions were not enough to overcome the reluctance of the authorities to risk a bitter dogfight for smoothing the path of the physiologists. (The Dog's Act of 1906 prohibited public pounds from making dogs available for research.)

The strength of the antivivisection movement as it existed in 1957 is indicated in the same pamphlet of the Research Defense Society from which I quote: "They have their shops and publish their literature; they have stalls in animal shows; they organize national and international conferences; number peers and Members of Parliament among their supporters; get questions regularly asked in Parliament; persecute pet shops and animal dealers who try to do business with laboratories; collaborate with the Royal Society for the Prevention of Cruelty to Animals (a theoretically neutral body) in the production of antivivisectionist films and produce antivivisectionist plays and literature galore."

Cruelty to animals was not the real issue when the British law was passed. The law did not prevent noblemen from hunting fox and fowl; it did not prevent trapping live rabbits and bringing them alive to the market with broken legs; it did not apply to vivisection practiced at farm places where "each year more than a million male and female animals have sensitive organs cut out of their bodies in full consciousness." (Evidence Royal Commission 1906.) Their law permits a man to drown an unwanted puppy, but would hold him in violation if he made any scientific observation while the puppy drowned, unless he had a license and certificate. The real issue was the antivivisection movement, directed solely against a professional group of scientific investigators and teachers.

The British are noted for their skill at compromise, but not always for their vision. In this instance their vision was faulty. They expected to appease the antivivisectionists by restricting and encumbering scientific research; and they paid the physiologists by protecting them from prosecution by the antivivisectionists. Instead, they gave the antivivisectionists stature and the number of their societies increased.

With greater vision the British might have foreseen the consequences of their law. With greater foresight and courage Britain could have protected her scientists from legal prosecution by the antivivisectionists as she actually did, without a compromise. But Britain was willing to pay the price.

The argument has been made that the quality of British research has not suffered under the British law. There is no question on that score. Work of good quality can be done by dedicated scientists even under adverse conditions. Lord Lister, the father of aseptic surgery did such research, but in 1898 when this country was faced with a bill in Congress to restrict animal experimentation, he wrote Dr. W. W. Keen in Philadelphia, "I am grieved to learn that there should be even a remote chance of the legislature in any State of the Union passing a bill regulating experiments upon animals. Our law on the subject should never have been passed and ought to be repealed. It serves no good purpose and interferes seriously with inquiries which are of paramount importance to man." (Lord Lister, by Douglas Guthrie, Livingstone Ltd., Edinborough 1949.)

The real question concerning the effect of the law on research involves not only the quality of research but the total output of research, to which many men must contribute. What the loss has been in the total productivity of British science is hard to reckon. There is evidence that science has suffered.

The bills now before Congress would, if passed, centralize in a government agency the power to approve or reject a research project; the power through authority delegated to inspectors, to make decisions concerning the progress of projects which it had approved; the power to specify in detail the requirements provided in the certificate of compliance, which are now very indefinite, and to make subsequent changes in these requirements without an amendment of the law, if sufficient political pressure could be brought to bear.

Concerning, for example, the matter of what constitutes a cruel or painful experiment there is the case of Gregerson and Root, who, in 1940, were requested by the Subcommittee on Shock of the Committee on Medical Research, Office of Research Development, United States, to make a study of the difficult problem of traumatic shock. As a result of their research, there was a dramatic improvement in the treatment of battle and air-raid casualties suffering from shock, and as a consequence, thousands of lives were saved. Did they receive the gratitude they deserved? They did not. Instead their experiments were "condemned as shocking to a normal human conscience" in a letter to the Lancet (August 1949) signed by Major Hume and five other members of the Universities Federation for Animal Welfare. The letter was reproduced, circulated in England by the Universities Federation for Animal Welfare, and there is evidence that it was circulated in this country by the proponents of these bills. If the signatories of the letter had had any personal experiences themselves of shock, if they had carried out any experimental work on shock, or had even been familiar with the literature, they would have realized that there is little pain associated with shocklike states. (Ref. Journal of the Research Defense Society, England, 1953.)

The bills before Congress, notwithstanding the humane objectives stated in their preamble, would, if passed, seriously slow down or impede research and would discourage the recruitment of promising young men and women into careers of research and teaching in medicine. They could work with scientific freedom in other fields.

Such bills, even if not so desired would, if passed, become an entering wedge for obtaining further restrictive legislation through amendments. Such efforts would be expected.

Such a law would invite agitation to obtain restrictive State legislation since there is an even greater volume of research being done with the support of State and private funds, that would not be subject to the provisions of the law.

If we are to learn from history, the history of the British law, both in its inception and its consequences, is enlightening.

WOODMERE, LONG ISLAND, N.Y.

DEAR SIR: I attended the Chicago Medical School this past September. I withdrew of my own accord from this school. One of the conditions which led to my contempt towards this school was the cruel treatment that was given to the experimental animals up there. The facilities for these animals were not only inadequate but, in addition, some of the people who handled these animals definitely appeared to have sadistic tendencies. I was not alone in my beliefs since many of the other students up there felt as I did and were also horrified at the conditions which these animals were forced to withstand. I could give you further evidence of my feelings, but I believe this is sufficient for the present. I sincerely hope that you investigate what I have told you and that you are able to do something to improve these conditions. Feel free to write me concerning any further questions which you might have in connection with the Chicago Medical School (710 South Wolcott Avenue, Chicago, Ill.).

I have just read about the twin bills calling for humane treatment of animals used in medical experiments, which have been introduced in both the Senate and House, I hope that these bills are passed. Will you be kind enough to send me your leaflets on these bills.

Sincerely yours,

IVAN L. RUBIN.

THE ASPEN CLINIC,
Aspen, Colo., August 29, 1962.

Mrs. ROGER STEVENS,
Animal Welfare Institute,
New York, N.Y.

DEAR MRS. STEVENS: I write you in support of bills H.R. 1937 and S. 3088 relative to the humane care of animals used in scientific experimentation.

I have been intermittently engaged in cardiac research requiring animal experimentation during the past 5 years or longer, and consequently have firsthand experience with some of the conditions which may exist.

It is my firm belief that medical research would be greatly impeded were all investigation forbidden to use experimental animals. Such work is indispensable to progress, and should never be forbidden.

On the other hand, there is no doubt whatever in my mind that a great deal of present animal experimentation is not only useless, repetitious, but cruel to the animals involved. In most instances this is due to carelessness or thoughtlessness rather than to deliberate cruelty. I have encountered only a few scientists who are deliberately and unnecessarily cruel—though they exist.

I thoroughly agree with the provisions of the above bills which deal with inspection of animal facilities, approval of experimental designs, and with the many other safeguards for the animals involved. In my opinion most scientists who deal in this type of research would agree with these safeguards, subject only to the provisions mentioned in the next paragraph.

I feel certain that the scientists who oppose these bills do so for fear of increasing Federal interference with private or institutional research. If an incompetent, ignorant, or corrupt inspector were permitted to approve or disapprove an experimental program, the entire program would be in jeopardy. Those of us who have been in private medicine fear Federal control more than anything else, and this is even more important in research where the borders are less well defined. If there were any way in which impartial, honest, and competent supervision could be placed over experimental animal research, it is my firm belief that most scientists would support these bills, but without this protection many scientists will fear them.

In summary then, if the supervision can be adequately controlled, I, like most scientists, strongly favor these bills.

Sincerely yours,

CHARLES S. HOUSTON, M.D.

UNIVERSITY OF PENNSYLVANIA,
THE SCHOOL OF VETERINARY MEDICINE,
Philadelphia, September 25, 1962.

Miss CHRISTINE STEVENS,
President, Animal Welfare Institute,
New York, N.Y.

DEAR MISS STEVENS: As a biologist who uses animals in research on reproduction, I am writing to add my support to bills H.R. 1937 and S. 3088. I must add, however, that I do so as a private individual and do not represent my department at the University of Pennsylvania in this matter.

Regrettably, many scientists have been urged not to support this legislation on the grounds that (*a*) it is unnecessary (*b*) it will hamper research. The innumerable instances of needless cruelty which I personally have witnessed, and which are well documented by the Animal Welfare Institute, refute the first of these contentions. The second is refuted by the enthusiastic support given by British scientists to their more demanding legislation (the British Act of 1876).

I believe that we should always remember that the purpose of a law is not primarily to control, but rather to educate and to sensitize us.

Perhaps you might bring these remarks to the attention of the committee at the forthcoming hearings.

Yours very sincerely,

RALPH GWATKIN.

91142—62——23

THE ROCKEFELLER INSTITUTE,
New York, N.Y., September 26, 1962.

Mrs. CHRISTINE STEVENS,
Animal Welfare Institute,
New York, N.Y.

DEAR MRS. STEVENS: I regret that I could not find the time to look into the details of the bill before Congress concerning the regulation of animal studies. The best I can do is to restate to you the general meaning of my statements when you visited my laboratory some time ago.

I believe that there is room for much improvement in several medical schools and research institutes with regard to the housing facilities for experimental animals. I believe such improvements are important for the welfare of experimental animals but also for the quality of experimentation. For this reason grants in aid now given for animal experimentation should include items for the renovation and upkeep of animal quarters.

Yours sincerely,

(S) R. DUBOS
RENÉ DUBOS.

DETROIT, MICH., *September 25, 1962.*

Hon. KENNETH A. ROBERTS,
Committee on Interstate and Foreign Commerce,
House Office Building, Washington, D.C.

DEAR CONGRESSMAN ROBERTS: Enclosed is a report of my visits to an animal laboratory in a Detroit hospital. The report is factual, accurate, and without prejudice.

I was not sure whether my report could be printed in the Congressional Record if I specified the name of the hospital and the doctors involved. Because everything I have stated is a matter of record on file with the Michigan State commissioner of health, I have no objection if the names are used. In fact, if it will help the cause to obtain legislation for "humane treatment of laboratory animals" I would prefer that names be used. I shall leave this to your discretion.

The name of the hospital is Harper Hospital, 3825 Brush Street, Detroit, Mich. The chief pathologist who accompanied me on my first visit is Dr. John McDonald. On our second visit we were accompanied by Mr. George Cartmill, director of Harper Hospital, and Dr. John McDonald, chief pathologist. On my third visit I was accompanied by Dr. Thadeus Jarkowski, a pathologist who works under Dr. McDonald.

On Friday, July 27, 1962, I went to Lansing and registered a personal complaint on Harper Hospital to Dr. Albert E. Heustis, commissioner of health, 3500 North Logan, in Lansing. This was followed by a written report to Dr. Heustis dated July 28, 1962.

I shall gladly and promptly supply any other information you feel will be helpful.

Sincerely,

Mrs. ROBERT L. DYCE.

Enclosure.

DETROIT, MICH., *September 25, 1962.*

Subject: H.R. 1937, for humane treatment of experimental animals.

Hon. KENNETH A. ROBERTS,
Committee on Interstate and Foreign Commerce,
House Office Building, Washington, D.C.

DEAR CONGRESSMAN ROBERTS: In October of 1960 I started on a carefully planned investigation of Michigan hospitals and pharmaceutical houses where live animals are used for experimental purposes. Since that time I have visited 12 such laboratories and I have witnessed some shocking evidence of neglect, abuse, indifference, and filth.

In the interest of brevity, I should like to submit specific accounts covering three visits made within a year to one Detroit hospital. A formal complaint of the inhumane treatment of animals in this Detroit hospital has been registered by the writer, both in person and in writing, to the commissioner of health in Lansing, Mich., and is a matter of record.

I submit and respectfully ask that the following excerpts from this complaint be placed in the Congressional Record in evidence of the great and immediate need for legislation to protect the millions of laboratory animals sacrificed annually in the United States.

VISIT, WEDNESDAY, JULY 19, 1962

I was escorted through the animal quarters by the chief pathologist of the hospital. The animal quarters are on the fourth and top floor of the oldest part of the building.

We first visited the room where the long-term dogs are housed. The dogs were all in old metal mesh cages, none of which contained resting boards. Although the State inspector had recommended that paper sacks be put on the bottom of the mesh cages, none were in evidence. The dogs were forced to sleep on the mesh bottoms of their cages. Many of the dogs were much too large for the small cages and could not move about, and some of them had difficulty in standing erect.

We then visited the room where the short-term dogs are housed. These dogs were also housed in metal mesh cages; there were no resting boards or paper sacks on the floor of the cages. The cages were old and dirty. Fur hanging in dark billowy strands from the top of two of the cages resembled Spanish moss. There were deep cracks in the concrete floor in this room and the rafters were covered with sooty black webs. The door leading from this room to the roof outside had been carelessly repaired with pieces of plywood, but one large hole still remained in the door.

One very sick dog had traces of recent surgery on his right side. I stopped and spoke to the dog and he made an effort to get up in response. As he did so, large quantities of a bloody puslike substance exuded from his nostrils and he coughed so hard he was not able to stand. I called the pathologist's attention to the dog and asked if something could be done to help him. The pathologist did not know what had been done to the dog (there was no identification of any kind on the cage) and he called the caretaker. The caretaker informed us the dog had had three operations—all unrelated—the last one having been performed on Friday, July 14, 6 days prior to our visit. I then asked if the dog had received any postoperative care. The pathologist did not know what postoperative care the dog had received—nor did the caretaker. Nothing was done to help this pitiful animal while I was there. A dirty dustpan, a rolled-up garden hose, and a pail were on top of this dog's cage, and pieces of fur were stuck on the grimy metal mesh of his cage.

VISIT, OCTOBER 19, 1961

Mrs. Christine Stevens accompanied me on this second visit. We were escorted through the animal quarters by the director of the hospital and the pathologist who was present on my first visit.

The room where the short-term dogs are housed contained about 15 dogs, 1 cat, and 12 or 15 rabbits excessively crowded in two upper-tier dog cages. The rabbits were so squeezed they could not even crouch quietly, but kept jostling. Rabbit-fur hung in billowy strands from the top of these cages.

The majority of the cages had no identification although most of the cages contained animals. A few of the cages had paper sacks covering the bottom of the cage.

Two of the dogs had had anastomosed intestines. The paper sack on their cage floor was sopping wet and dirty with moist and slimy excrement. One of these dogs was in a lower tier cage and he was dripping wet. These dogs were forced to sit, stand, and lie in this incredible filth. At Mrs. Stevens' request the wet and filthy papers were removed from these two cages. The floor in this room was dripping wet, giving evidence that it had recently been hosed. Most of the cages were wet as were the dogs who occupied the lower cages, giving evidence that they must have been in their cages when the hosing was being done.

Some of the food pans had been chewed almost to pieces—bits of tin were sticking up in all directions like lacework. We asked if the dishes were ever sterilized to avoid transfer of germs. We were told by the pathologist that the dishes are not sterilized because they do not have facilities for sterilization.

Various items were lying about here and there on top of the cages, including a pail, a dirty dustpan, and a cruel-looking dog stick with many tooth marks in it. It was the first time I had ever seen a dog stick in a laboratory. The many tooth marks it contained gave silent evidence that it had received a lot of use.

Another unidentified dog had a wound in his neck—pus appeared on the surface of the wound and a thin plastic tube stuck out of it. There was no paper sack in his cage for a resting place.

Another room contained a few mice, some hamsters, and about 10 rabbits. All of the rabbits had runny noses and only three of them had identification on their cages (the names of the patients). Some of the others had some very old looking signs saying "Female" or "Male," but nothing further.

When we left the animal quarters we went with the director to his office. He told us that he would have resting boards made and installed in the dogs' cages. He also said he would install a new door to replace the one with the holes in it. He also said he would order new food dishes for the dogs.

The director also told us that he had twice closed the animal laboratory because their facilities were inadequate. He had reopened it at the request of the chief pathologist.

We left there with hopeful hearts that the improvements would be made as promised.

VISIT, MONDAY, JULY 23, 1962

On this visit I was escorted by one of the pathologists of the hospital.

The room where the short-term dogs are housed still had the big cracks in the concrete floor, the broken-down door had not been replaced, the promised resting boards had not been installed, nor were the recommended paper sacks covering the mesh bottoms of the cages. The chewed-up food dishes were still stacked on a table (only more chewed-up than ever) although we did see some new food dishes. The long billowy strands of fur had been removed from the two cages, but the other cages did not show any signs of a recent cleaning .

One of the dogs in this room was extremely thin. He was in one of the lower tier cages and the cage was soaking wet. The dog was damp and very dirty and was wearing a heavy leather collar intended for a dog four times his size. The collar was so encrusted with dirt and fur that it could not be removed unless it were cutoff. Th dog was a cocker spaniel type dog and his long ears had balls of fur the size of an egg hanging from them. I called the pathologist's attention to this dog and expressed the hope that such a thin dog would not be used for surgery. The pathologist hastened to assure me that the dog would not be used for surgery in such an emaciated condition. He then told me the dog had just arrived and would look better in a few days after he was bathed and fattened up. I then asked if we could remove the heavy collar because it was weighing the dog down. The pathologist then called the caretaker to see about having the collar removed. The caretaker then told us the dog had already had one operation—bowel surgery—and that the collar wouldn't come off.

There was, of course, no identification on this dog's cage.

We went to the room where the long-term dogs are housed. Here again the floor in the room was very wet. One of the lower tier cages contained a mother dog and her 4-week-old puppies. A paper sack covering had been placed on the bottom of this cage, but it was so wet and soggy it covered only half of the bottom of the cage. The mother dog was wet and her four tiny puppies were dripping wet and shivering. At my insistence, the mother dog and the puppies were removed from the cage and an attempt was made to dry them. The puppies were so wet, however, that it was impossible to get them thoroughly dried. The caretaker removed the soggy paper and replaced it with a dry blanket. The mother dog wagged her tail in grateful thanks as she and her still shivering puppies were deposited on a dry clean blanket. It was impossible to determine what type of surgery had been performed on the mother dog—there was no identification on her cage.

Had the inhumane treatment I've described been perpetrated by an individual, he could and would be punished by law, yet millions of animals behind the closed doors of our laboratories are the unprotected victims of cruel and inhumane treatment. These forgotten animals who contribute so much to mankind deserve to be protected by the most rigid Federal laws.

We are hopeful our lawmakers will take immediate and definite action to provide laboratory animals in this country with the protective legislation they so richly deserve.

Respectfully,

Mrs. Robert L. Dyce.

BETHESDA, MD., *September 24, 1962.*

Hon. KENNETH ROBERTS,
House Committee on Interstate Commerce.

DEAR CONGRESSMAN: Miss Christine Stevens, president of the Society for Animal Protective Legislation, asked me to say a word on H.R. 1937 before your committee, Friday, September 28. If, however, your time was too taken up in these closing days of the Congress, possibly a statement might suffice. I shall, if possible, be on hand. Statement follows:

"My name is Alexander Sharp, vice admiral, U.S. Navy (retired); class of 1906, U.S. Naval Academy; age 77; address, 6306 Bannockburn Drive, Bethesda, Md., Montgomery County. I am a member of the Humane Society of the United States and also a member of its Montgomery County branch.

"I cannot speak with firsthand knowledge on the subject of animals for experimental purposes in hospitals, but the subject will no doubt be fully covered by Miss Stevens who does know.

"The 'Information Reports,' Animal Welfare Institute, 22 East 17th Street, New York, N.Y., for September–October 1961; for January–February 1962; for March–April 1962, and the report from Concern of the General Board of Christian Concerns of the Methodist Church, November 15, 1961, 'Laboratory Animals Need Your Help,' together with the pamphlet 'The Case for Humane Vivisection' by Paul W. Kearney—give a good idea of the case, and make one wonder whether we are living in a civilized country or in the days of Genghis Khan here in our beloved country. The record contained in the above pamphlets together with information picked up in less documented form makes one wonder why such callousness, neglect, and cruelty has not been the subject of preventive legislation long before this. The British have an act which humanely regulates experiments on animals.

"I hope and pray that Senate bill S. 3088 and House bill H.R. 1937 may pass the Congress soon, for it has been said in the military that 'inspection makes 'em good and keeps 'em that way.'

"I never heard of sailor men maltreating animals and can figure no one would get away with it in their presence. As a hard old sailor myself, I think the time has come to stop neglect and cruelty to those who can't defend themselves."

Very respectfully,

ALEX. SHARP.

THE GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE,
DEPARTMENT OF PHYSIOLOGY,
Washington, D.C., July 10, 1962.

Congressman OREN HARRIS,
House Office Building, Washington, D.C.

DEAR CONGRESSMAN HARRIS: As scientists actively engaged in medical research, we would like to express our reactions to the Griffiths bill, H.R. 1937, and to the Moulder bill, H.R. 3556, now before the Committee on Interstate and Foreign Commerce, pertaining to the use of animals in research. From our combined experience in a number of medical schools and medical research institutions we feel that for the most part such bills are unnecessary, and, in the rare instances where abuses have occurred, such bills would not have prevented them. Carelessness in the handling of animals by either scientists or caretakers is best dealt with by those on the spot, whether colleagues or employers, rather than by annual reports and occasional inspection visits.

We are also concerned about specific provisions in each bill. The Griffiths bill, although more moderate than the Moulder bill, would still impede medical research. There are blanket conditions set which, though good as general guidelines, would rule out certain important types of experiments. For example, the requirement for adequate food would preclude nutrition studies of the minimum daily requirements for foodstuffs; and the provision that all animals used by students be killed without recovering consciousness means that a student of surgery could not ascertain whether a practice procedure had in fact been successful; indeed, it would demand that this particular experiment be performed and its outcome be determined on a young surgeon's first human patient.

Proponents of the bill state that the paperwork required for the project plan an annual report will take an insignificant amount of a scientist's time. No one can make such a statement, since the bill leaves the form of the project plan,

the annual report, and "such additional reports or information as the Secretary may require" to be set by the Secretary. Anyone who has worked with Government forms knows that they are made up to include every conceivably useful detail and tend to enlarge and proliferate rather than the reverse. The facts are that project plans are already on file with each agency before funds are granted, that no agency is forced to give funds to what it considers to be ill-conceived, unnecessary, or cruel experiments, and that applications have been turned down on the basis that the experimental design was not as humane as it should be. Therefore Government and private agencies already have, and are exercising, the right to see that research money goes only to competent scientists with adequate facilities, including animal care facilities, for the research they propose to do.

The provision that representatives of the Secretary, with unspecified training, could destroy experimental animals with no chance for appeal could endanger costly long-term experiments if the representatives were not in a position to evaluate the techniques being used against the information to be gained. It is hard to imagine that highly trained individuals would care to make a lifetime profession of such inspection chores, and it might be relatively simple for a person opposed to animal research to obtain such an inspector's position and arbitrarily terminate significant work.

Finally, the definition of "person" to include "institutions" and "organizations" would lead to considerable confusion, if not to real detriment to research. It could result in the suspension of all federally supported research at a large university, for example, if a single individual failed to comply with some provision of the act.

The Moulder bill contains a number of provisions which, while sounding good from the outside, are completely unrealistic.

First, the definitions lead to a variety of interpretations. There could be a real difference of opinion as to which lower animals are capable of developing a conditional response, "stress" as defined would include the taming or training of an animal, and "laboratory" can mean both an institution and a group or person within that institution.

Second, the list of fields in which an applicant for qualification may be trained does not include biochemistry, pharmacology, or microbiology; yet these are all fields of exceedingly productive research, including much of the research on cancer, which involve the use of experimental animals.

Third, the Commissioner of Laboratory Animal Control, designated by the bill to supervise the regulatory program, is required not to have had any experience with, or direct knowledge of, medical research, through the provision that he shall never have been connected with any laboratory. This insures that the Commissioner shall have the least possible background for the job he is to do. Indeed, under the broad definition of "laboratory" used in the bill, the Commissioner cannot even have been connected with, or graduated from, a school where animal research was carried on.

Fourth, the provision that "anesthetics shall be administered only by licensed veterinarian or a doctor of medicine qualified in anesthesiology" would require that each investigator have the services of a veterinarian or anesthesiologist available at the start of each acute experiment. It would mean that a doctor of medicine without specialized training in anesthesiology would not be allowed to administer any anesthetics to animals, though he might do so to human beings.

Finally, the provision that all project plans be made available for public inspection, study, and copy might discourage people with really new ideas for which they wished to receive credit from publishing their plans in such a way before they could be tested, or might lead to the submission of vaguely worded or actually misleading project plans in order to preserve secrecy in areas where competition for new discoveries is keen.

This bill is frankly antagonistic to medical research and, while having the appearance of allowing such research to proceed, could be used to bring it to a virtual standstill. We believe that the Congress, which is presently supplying funds for vast research programs in a number of health sciences, does not want this to happen.

What is needed at the present time in place of these restrictive bills is a better program for training for both animal handlers and scientists, and better facilities for both research animals and research workers to allow the most humane and productive use of the animals that are serving so importantly in medical research today.

Very truly yours,

EUGENE M. RENKIN, *Professor and Chairman,*
FRIEDRICH P. J. DIECKE, *Professor, Associate,*
CHESTER E. LEESE, *Professor,*
CHARLES S. TIDBALL, *Assistant Research Professor.*
RUTH M. HENDERSON, *Assistant Professor,*
MARGARET WESTECKER, *Assistant Professor.*

WASHINGTON, D.C., *September 26, 1962.*

Hon. KENNETH ROBERTS,
Chairman, Committee on Health and Safety of the House Committee on Interstate and Foreign Commerce, House Office Building, Washington, D.C.

DEAR MR. ROBERTS: This communication is addressed to you to urge favorable consideration of H.R. 1937.

In order that you may know something of my qualifications to address you on this subject, I might state that almost my entire life has been devoted to working with animals. I was engaged in fisheries, fur, and game protection work in Alaska, Arizona, and southern California for a total of about 15 years, and following that I was in the Washington office of the U.S. Biological Survey in immediate charge of the wildlife reservations. From March 1, 1930, to December 31, 1956, I was Assistant Director of the National Zoological Park. Since my retirement at the end of December 1956, I have been engaged in a research and writing project to bring together information regarding the "Genera of Recent Mammals of the World," which is to be published in three volumes by the Johns Hopkins Press.

I feel that a great deal of needless work is being done in many of the experiments on animals, and when experiments are necessary they should be carefully planned so that they will yield the maximum results with a minimum of expenditure of effort and suffering by the animals. I especially deplore the indiscriminate experimentation by students who do not know the basic principles of carrying on an intelligent experiment with the result that they become hardened to the sufferings of animals, and such suffering is greatly increased by their ignorance and indifference.

Another aspect is that even in well-organized laboratories if animals are not kept under proper conditions and they are not permitted sufficient freedom of movement so that their physical activities and body functions can be normal, the value of the experiment is open to serious question, for unless the body is functioning normally, certainly the experiment cannot be of maximum value.

Monkeys are extremely sensitive creatures, certainly having keener senses in some respects than humans have. Therefore the most rudimentary knowledge of experimental work would require that the monkeys be well treated in order for the experiments to be valid. A recognition of the fact that humans are only one of thousands of different kinds of animals on this earth which also have their rights, raises great doubt of man's rights to destroy and torture them. Certainly mammals which have some senses far superior to ours and are accustomed to great freedom and have as much right on this earth as we have, are entitled to the utmost consideration if they are to be used in experimental work.

I hope you will consider that this communication is of sufficient value to justify publication of it in the record, for I am certain that it reflects the sentiments of a great many people who do not voice themselves on the subject. The animals will be benefited by enactment of this bill, and the people who finance experimental work on animals will certainly appreciate any curtailment that you may be able to bring about in the very extensive, expensive, and often ill-advised experimental work.

Very sincerely yours,

ERNEST P. WALKER.

LOS ANGELES, CALIF., *July 17, 1962.*

MRS. CHRISTINE STEVENS,
Animal Welfare Institute,
New York, N.Y.:

In response to your request for a statement which could be introduced as testimony before a congressional committee, I am writing you this letter. I will have it notarized so that you may use it as an affidavit.

My considered position in regard to the use of laboratory animals is a moderate one. I believe in the use but not the abuse of animals. Hence, I suffer the fate of most moderates, which is to encounter criticism from both directions.

Whenever humanitarians raise the question of the humane treatment of laboratory animals, the reply is usually to the effect that any and all animal suffering is justified because of the reduction of human suffering which research makes possible. But is this argument valid?

It is true that some research does make possible the reduction of human suffering. But not all of it. Perhaps not even most of it. Much research is undertaken by students who need topics for term papers, masters' theses, or doctoral dissertations. Some is done by professors who need to publish in professional journals in order to obtain advancement in academic rank, or salary increases, or both. Some is undertaken in the interests of pure science to collect evidence toward the acceptance or rejection of challenging hypotheses. To be sure, all of these objectives are worthy of consideration. This writer is not opposed to the aims of pure science or academic advancement. Far from it. But if we are to inflict severe and prolonged pain on laboratory animals under the old argument that the end justifies the means, to be logical we must examine the ends critically to determine whether they really do justify horribly painful means and also whether similar ends might not be achieved by less painful means.

I accept the argument that pain is often necessary to reduce pain. The production of vaccines is at the cost of much suffering in the animal world but they serve to obviate an enormous amount of suffering. Practice surgery is part of the necessary education of surgeons. Animals are needed for research on new drugs and new methods of combating disease. These things are part of the price of modern medicine. But all of these things may be done under some reasonable limitations such as the British use and could be done under the legislation which S. 3088 and H.R. 1937 would impose.

However, from reading the scientific journals over the years, I am convinced that a great deal of pain (even prolonged agony) is rather frequently inflicted on laboratory animals for reasons not even remotely related to the reduction of human suffering. For the purpose of illustration only, and not to point out a particular researcher for criticism, the investigations of Miller [1] may be cited. His report describes a series of experiments designed to investigate some points of undoubted interest to theoretical psychologists but, as far as I can see, not related to the work of clinical or consulting psychologists in their service to humanity. The report goes on to describe things which were done to laboratory animals which must have been extremely painful and which evidently went on for some considerable time. Not only did Professor Miller do these things himself, he also gave the names of some of his students whom he induced to participate in these practices. Anyone who cares to pick up a copy of the American Psychologist for December 1961 can read all this for himself.

I wish to emphasize that the study I have cited was not unusual in the amount of suffering inflicted. I wish it were. Neither is it unusual in being unrelated to the reduction of human suffering. Anyone who will take time to look through a few scientific journals will find other such studies and some much more cruel.

It is a fact of American academic life that status and advancement often depend on publication. Scholars are sometimes hard pressed to find new topics to write about. But it is not necessary to inflict pain in order to publish. Much research can be carried on without inflicting pain at all. By redesigning an experiment it may be possible to obviate, or at least greatly reduce, the amount of pain inflicted. Educational researchers have succeeded in studying the reading habits of children without cutting their eyes out.

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[1] Miller, Neal E., "Analytical Studies of Drive and Reward," American Psychologist, vol. 16, pp. 739–754, December 1961.

In conclusion I will state that as a citizen and as a psychologist I will entertain the argument that the end justifies the means if it really does justify it. I do not believe that severe pain should be inflicted on helpless animals for superficial or trivial reasons. Therefore I add my endorsement to those of other citizens in favor of Senate bill 3088 and House bill 1937.

If the members of the committee wish to know who I am, you may show them the listing of my name in the directory of the American Psychological Association and tell them that I am associate professor of psychology at Los Angeles City College.

Respectfully submitted.

EMILE PAINTON, Ed. D.,
Certified Psychologist.

Subscribed and sworn to before me this 17th day of July, 1962.

[SEAL] JOHN F. SMITH,

Notary Public in and for the County of Los Angeles, State of California.

My commission expires November 24, 1962.

MARCH 14, 1961.

Re bill S. 3570.

Hon. OREN HARRIS,
Chairman, Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.

DEAR MR. HARRIS: Recently, Senator John Cooper declared his intention to reintroduce a bill similar to the bill introduced by Representative Martha Griffiths to provide legislation to insure the humane treatment of animals, especially animals used under investigative grants from U.S. agencies.

This bill labors under the erroneous impression that the responsible investigators do not treat animals in a humane fashion. It should be pointed out that before U.S. agencies make research grants to institutions, investigations are made of the facilities of each institution to which the grant is directed. This is reasonable and proper and insures adequate control of research moneys. To place onerous administrative burdens on the already heavily burdened investigators will utilize a good deal of their time and effort in useless administrative details. The productivity of investigators will be limited and the efforts of a large number of scientists will be diverted to useless paperwork at a cost of millions of dollars to the Government.

There has been no satisfactory investigation by Congress of the need for such legislation. If such responsible agencies as the Animal Care Panel fails to find any need for restrictive legislation, this can be taken as good evidence that no such need exists. Aside from throwing a roadblock in the way of medical and scientific research, this new measure will be a further extension of Parkinson's law to Government regulation.

Sincerely yours,

HARRY H. LEVEEN, M.D.
Chief, Surgical Service, and Professor of Surgery, State University of New York, Downstate Medical Center.

CANCER CHEMOTHERAPY NATIONAL SERVICE CENTER—AN EVALUATION OF ITS ANIMAL CARE PROGRAM BY WARDS (WELFARE OF ANIMALS USED FOR RESEARCH IN DRUGS AND SURGERY)

FOREWORD

The CCNSC program for research animal care gives hope and direction to those concerned with the useless waste and suffering of experimental animals; those interested in economy and those scientists who know that standards for the selection and maintainance of these animals are essential.

Under the National Cancer Institute, CCNSC was established by Congress in 1955, to screen chemicals and other agents in order to find those that may halt cancer growths or cause them to regress. This is a vast operation guided, coordinated, and served by a handful of people. A very small, well defined section of CCNSC directs a national program of cooperation for animal care. To qualify for a contract with CCNSC, the applicant must meet certain standards of animal care and agree to at least two annual inspections.

CCNSC is unique in the National Institutes of Health. Within NIH the National Cancer Institute is one of seven institutes each of which uses from 7 to 12 species of animals. CCNSC is the only agency in NIH that recognizes the importance of national planning and followup to insure a single high standard of care for animals. CCNSC provides planned management from breeding source through all experimental processes.

In three installations, visited by WARDS, approximately 1 million mice are used each year (not all on the cancer program). These places demonstrate what can be accomplished through guidance and cooperation. Here efficient likenesses are more prevalent than differences. CCNSC would be the first to admit that constant change for better service is its purpose. WARDS agrees that nothing should be static in this neglected department of animal husbandry where there is so much still unknown.

We should no longer base our experimental findings on any animal that happens to be handy and allow it to be kept in as many ways as there are scientists. A national service department for all research animals is of immediate importance. We hope that this subject will be given the same legal status and organization provided to insure the use of these animals in research.

Guided by scientists at the National Cancer Institute and those across the country the chemotherapy program represents the united effort of Congress, other Government agencies, lay groups, and drug firms.

The report that follows is a description of some of the goals and results of CCNSC. It shows what is involved in the care of mice in research. It suggests also the situation that should exist for research animals under NIH and all research installations.

GOALS OF THE ANIMAL CARE PROGRAM OF CCNSC

1. To assemble facts needed to keep institutions informed concerning methods and improvements that advance the care and well-being of laboratory animals.
2. To recommend measures that will be effective in advancing a high standard of care through better housing, professional supervision, and trained caretakers.
3. To give technical assistance to institutions for the improvement of care so that changes come as a result of understanding and interest.
4. To administer the financial aid that the Cancer Institute appropriates each year for care. This includes costs estimate for maintaining animals in a uniform environment. To make the care of these animals a prime consideration in granting contracts. These contracts include an agreement that the contractor will adhere to the Institute of Laboratory Animal Resources minimum standards for the care of laboratory animals. In addition they agree to receive at least two animal quarter inspections visits each year.

REASONS FOR THIS SERVICE

The scientist of the National Cancer Institute knew that mice were affected by many different factors which in turn might influence the results of research findings. Mice are influenced by noise, exposure, crowding, bedding of the wrong kind, being caged singly instead of in groups and a whole list of other variations in care. Many years ago scientists observed that genetic background and environment and variations of this pattern were a determining factor in results. They even learned that, on a long-term basis, boredom lessens the ability of the rat to respond normally.

NOTE.—Cancer scientists faced the fact that care of the research animal is a highly technical operation that could only be adequately provided by careful planning. We are giving only the briefest suggestion of the factors that can nullify findings on these small uncomplicated animals.

SOME RESULTS OF THIS CAREFUL CENTRAL PLANNING

1. Standards: The CCNSC is responsible for the first standards in this country for the care of the research animal. These are the "Minimum Standards for Laboratory Mice" and were drawn up by ILAR. CCNSC already looks to and encourages higher standards than these minimum. In this, WARDS concurs most heartily.
2. Production costs are known, budget estimates are reviewed and the contractor is responsible for losses by disease or neglect in his colony of mice.

3. Breeders who do not meet the CCNSC standards are striving to do so and the entire industry has been improved. These standards are available on request to anyone, so those not associated with CCNSC are improving their own facilities with these guidelines. The enlarged interest and new practical advances are apparent in the literature of the past 6 years on the subject.

4. Transportation: The application of increased knowledge concerning the requirements for optimal care has led to improvements in shipping methods and ultimate cooperation between the carrier and the shipper. Again funds were supplied to ILAR to draw up standards for this purpose.

5. Housing and equipment: Institutions in the CCNSC program have been stimulated to provide basic designs of housing to control disease in animals and facilitate better care. These procedures are being followed by other departments in institutions where the example of CCNSC has been set. New equipment in other departments are bought to use the cleaning and sterlizing machinery of CCNSC. This means streamlined equipment for economy.

6. Personnel: Another place where CCNSC has set the pace is in professional supervision and trained personnel. Although a CCNSC contract may be a comparatively small segment of the complete program of biological research conducted at the institution, it is transmutable to other areas by an integrated service department with a strong chain of command. In this department of research, like every other, organization is necessary. It cannot have several bosses and ultimately be nobody's business and be efficient.

In this program, care of the animal has achieved the status and serious attention necessary to do the job. This means a higher morale among employees.

7. Information: A large function of CCNSC is the accumulation of experimental data in the fight on cancer.

In the field of animal care practical methods have been gradually taking the place of unplanned procedures. Ideas that do not work are being discouraged while new ideas have been welcomed. This is done by working with people in institutions and through demonstration.

Other research programs using mice have recognized the value of the exchange of information with the CCNSC central source.

8. Disease control: There are two diagnostic centers where help can be obtained when disease becomes evident and before it results in epidemic waste. The centers also conduct research into the diseases of these animals. An emergency stock of breeder mice is kept at one installation in case of disaster.

9. Conservation and economy: It was encouraging to see that tissue cultures, microbiological systems, and chick embryos are being used as a preliminary screening to eliminate some of the substances before mice were used. CCNSC makes persistent efforts in this direction.

REPORT OF WARDS VISIT TO THREE INSTALLATIONS UNDER THE CCNSC PROGRAM

(Hazleton Laboratories, Inc., Microbiological Associates, Inc., in the Washington area and Southern Research Institute in Birmingham, Ala.)

NOTE.—There is no attempt here to give a detailed picture of animal care practiced at these institutions. The Animal Facility Accreditation Questionnaire of CCNSC is a 14-page document. It asks 17 questions about cages, their size, material, space per animal, etc.: 6 questions about the watering system; 7 questions about the feeding system; 7 questions about the animal rooms; 11 questions about bedding; 8 questions about ventilation; 24 questions about cleaning, including system for disposal of bedding, food, and dead animals; 28 questions under the heading of disease diagnosis and prevention; 18 questions under genetics and recordkeeping and 13 questions under nutrition. Just trying to answer them is an education in itself.

Administration: At all three installations the areas of responsibility are clearly defined. The care of the research animal is recognized as a separate, important, technical operation. Funds for this purpose are provided. The person in charge of this department has complete responsibility and the necessary authority. Qualifications to head the departments differed from a veterinary degree to long-term informal training or college training in related subjects.

In one place visited where several research projects, in addition to cancer, use mice they are supplied by the single service and the on-experiment animals are also serviced by the central animal-care department. We understand that scientists here welcome this central service.

Building and equipment: The three installations have been built in the last 8 years. They provide a section for quarantine and a section for on-experiment study. Each provided for the careful handling of waste, either by a dirty and clean corridor or by closed containers that transported the soiled cages and returned clean cages by means of sanitized containers. Equivalent systems are used for sterilization and transportation of water bottles. Food differed according to the preference of the laboratory but in each case sanitary handling and freshness are assured. Bedding also differs but its sanitary quality is assured.

Cages: There are as many varieties of cages as there are installations. One factor remained constant, however, the 8 square inches per mouse was maintained which is the minimum standard arrived at by ILAR. Cages are cleaned once a week. This period between cleanings is figured by the ratio of the number of animals, the amount of bedding and the size of the cage. Also the number in each cage was determined by the safe number that can huddle in one corner (as they do for rest and comfort) without injury.

Design of cages in quarantine: These are made of stainless steel or clear plastic. A good design is a stainless steel cage, with feed hopper close against the side of the cage on the inside. This makes it necessary for the keeper to lift the lid in order to feed the mice. It gives an opportunity for a full clear view of the interior for inspection purposes when the hopper is filled. This hopper is smaller than some others. The top of this cage is a series of round holes in a stainless steel surface giving a smooth surface on both sides for ease of cleaning.

Another quarantine cage has two hoppers for food at opposite corners of the cage. It would be interesting to knqw if this better distribution of food adds to the health of the mice.

Design of cages in the on-experiment section: Again there is a variety of materials used. The cages are smaller and each holds five or six mice according to size. In our estimation the best are the stainless steel cages with wire mesh tops allowing the animal the same measure of seclusion it has during its quarantine. This is an advantage since the animal must take on the additional stress of the experimental procedures. One tray of five cages is designed for easy cleaning and bedding disposal. Least satisfactory are a few cages used at one institution designed originally for nutrition studies. They were wire mesh on the front and bottom.

Disease control and safety: In addition to standard cage cleaning methods all animal attendants are provided with clean uniforms. Facilities for showering are installed but their use was not mandatory. Washing hands before touching animals is used as a precaution.

Regular inspection and random tests are made on mice as a disease protection. In case of death from unknown origin necropsies are performed. If necessary the disease center is contacted.

Weekend animal inspection is provided at the three places. Fire inspection is practiced at the three installations.

PERSONNEL TRAINING AND SALARIES

Training of caretakers in the two Washington installations is augmented by local teaching programs. Tuition is paid by one place to encourage attendance. In Birmingham there is no local training program so Southern Research Institute provides 1 for 6 months based on a manual.

We were unable to get the figure for the average salary of caretakers on this program and the average length of employment. We would think that good working conditions would make these figures better than the average on other programs. Perhaps a survey presently being conducted by ILAR will throw some light on this subject.

PROCEDURES

Mice are 5 to 6 weeks old when received from the breeder. One installation raised its own mice.

Mice are put in quarantine immediately upon receipt after inspection, and detailed information is noted on a card which is affixed to each cage.

Mice are quarantined for a period ranging between 7 days and 2 weeks in accordance with the strain. They are weighed periodically and put on experiment when the desired weight has been obtained.

The process of weighing was conducted differently in each installation. The best method seemed to be the one where the space between the container for the mice and the scale is the closest. It was observed that this work was performed in every installation while the men were in a standing position. Since weighing is necessary at a number of points in this program, perhaps the comfort of the technician and the ease of handling might be improved if this procedure were to receive the benefit of formal study.

Three classes of mice are usually present in these colonies and consist of those kept in quarantine, those used for investigations, and others used for tumor tissue production. Their status is indicated by the careful information that is noted on the individual record cards.

All mice are killed by a single, quick, and humane method.

In the details noted above it might appear that the differences in care surpass the similarities in this small area, i.e., the scientific husbandry of mice. This is not true. In the overall perspective, similarities are the rule, and the differences, whether they be good or bad, are only a healthy sign of an everchanging central program directed toward a high standard of care.

JUNE 12, 1961.

Hon. VANCE HARTKE,
U.S. Senate,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HARTKE: Two bills, H.R. 3556 (the Moulder bill), and H.R. 1937 (the Griffiths bill) which have serious implications for medical teaching and research in Indiana and the rest of the country, have been referred to the Committee on Interstate and Foreign Commerce of the House of Representatives. Both bills will require prior approval of research plans, one at least (H.R. 3556), prior approval of all changes in scientific procedures to be employed; implicit is the prospect of numerous scientifically superfluous reports, ultimately destined to make Washington the repository of additional records requiring large numbers of clerks to read, sort, and file. One estimate has been that Federal regulation of science would add $54 million to research costs.

Both bills propose the beginning of regulation January 1, 1962, with what appears to be an inadequate survey and study of the situation. Studies are being made by the AAMC Committee on Laboratory Animal Care, the Animal Care Panel, and the Institution of Laboratory Animal Resources of the National Academy of Sciences, NRC, all giving evidence of the sincere desire of medical scientists to maintain and even improve the high standards of animal care that exist generally in the research laboratories in this country. It should be obvious that the maintenance of high standards of care of the experimental animal are to the best advantage of any research program. All major scientific societies in the country are aware of the problem of cruelty to animals. Important scientific periodicals are barring from publication any papers which suggest painful procedures to unanesthetized animals.

On the contrary, the proposed bills to regulate research offer no constructive provision for improving laboratory animal care, but on the contrary, provide numerous handicaps and potential hazards to scientific investigation. No provisions are made for research to develop better methods, for training of personnel, and appropriations for better facilities.

Moreover, annual or occasional visits by agents of the Commissioner of Laboratory Animal Control (H.R. 3556), or authorized representatives of the Secretary of Health, Education, and Welfare (H.R. 1937) would be well-nigh useless in detecting infringements. More numerous visits would make it a policing action, necessitating increased bureaucracy and expense. It would appear best to have regulation in the hands of those most qualified, namely, the deans of the medical schools, directors of research institutes, and academic department heads.

To add a few more specific points of criticisms:

1. The provision of the Moulder bill to have appointed a Commissioner who has never been connected with a laboratory is naive and unrealistic.

2. The principle of substitution as expounded by the Moulder bill (meaning the use of a "less highly developed species of animal for species more highly developed" in research projects) is biologically absurd, and beyond that, impractical.

3. The requirement that all anesthetics be given by a licensed veterinarian or M.D. qualified in anesthesiology is another example of the shortsighted character

of the Moulder bill. For example, the vast numbers of mice and rats undergoing anesthesia for research purposes are anesthetized by proporly trained technicians who hold neither D.V.M. or M.D degrees and it would seem absurd that such a degree be required. Then, for consistency, why should not rabbits, dogs, monkeys, and so forth, not be anesthetized by such trained technical personnel?

4. The allegation that H.R. 1937 is a moderate proposal soundly based on 85 years of experience in Great Britain is insidious and dangerous. The United States leads the world in medical research and training, and this is because animal experimentation for research purposes and for the teaching laboratories has been unlimited and unrestrained.

In closing, it is my belief that the congressional representatives from Indiana will agree that the development of a strong medical, teaching, and research center in Indianapolis is for the best interest of the people of the State. The Indiana University Medical, Dental, Nursing, and Allied Health Sciences have shown remarkable growth in the past several years. Large governmental research allocations have materially aided in this, and even larger sums are pending. The restrictive nature of the Moulder and Griffiths bills would ultimately impede this school's progression to top rank among the medical schools in the country.

Yours sincerely,

EWALD E. SELKURT,
Professor and Chairman.

NATIONAL TUBERCULOSIS ASSOCIATION,
New York, N.Y., September 27, 1962.

Representative KENNETH A. ROBERTS,
Chairman, Subcommittee on Health and Safety, House Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. ROBERTS: The American Thoracic Society, the medical section of the National Tuberculosis Association, is seriously concerned over legislation currently being heard by your committee, the purpose of which is to limit the use of animals for medical research purposes.

I enclose a statement of the American Thoracic Society, endorsed by the board of directors of the NTA, which covers our specific objections to this type of legislation.

We believe that passage of H.R. 1937 and H.R. 3556 could result in serious handicaps for researchers and thus impede the future of the Nation's medical research programs. We would appreciate your committee giving serious consideration to the arguments advanced against this type of legislation in the ATS statement before it takes action on these particular bills.

Sincerely yours,

JAMES E. PERKINS, M.D., *Managing Director.*

AMERICAN THORACIC SOCIETY, NATIONAL TUBERCULOSIS ASSOCIATION—STATEMENT ON CARE OF LABORATORY ANIMALS

The American Thoracic Society, medical section of the National Tuberculosis Association, is opposed to Federal regulation of medical research involving animals as proposed in certain bills recently before the Congress, namely S. 3570, H.R. 12587, H.R. 12757, and H.R. 12621. Such legislation would be restrictive, expensive to administer, and is unnecessary for the improvement of laboratory animal care.

The investigator must be free to follow new leads that develop as his experiments proceed. He would be unduly hampered if each new turn in his work required special permission from a Government bureau.

A Federal system of inspection and license which could keep up with the grant program would require a tremendous staff with a corresponding budget for salaries and travel. This expense would add materially to the cost of medical research.

Standards for the care of laboratory animals are improving steadily without compulsion because the best use of animals requires that they be kept in good condition. The major laboratories receiving grants from the Government and other agencies have already adopted generally accepted standards covering the humane care and treatment of laboratory animals.

For these reasons, the society recommends that efforts to establish a Federal system of compulsory regulation of laboratory animal care be resisted and that the demonstrated success of the voluntary system be further supported.

Approved October 25, 1960, by executive committee, American Thoracic Society.

LONDON, ENGLAND,
September 29, 1962.

Hearings on H.R. 1937.

To the Honorable KENNETH ROBERTS.

DEAR CONGRESSMAN ROBERTS: May I add to the record the following comments on the testimonies of two witnesses?

Dr. Helen Taussig's fanciful account of the hindrances to which Dr. Blalock's work would have been exposed is sufficiently refuted by the letter from Sir Russell Brock, which is included in my testimony. Brock originated some well-known improvements in the blue-baby operation and his letter shows that Dr. Taussig's statements are pure inventions without any foundation of fact.

Dr. Pfeiffer raised a valid objection to the Moulder bill, but did so in a manner which calls for comment. His sneer about two worms on a hook prompts me to compare Charles Darwin, who always killed his worms before using them for fishing, with Dr. Pfeiffer who set a boy of 17 to poison mice with the venom of the black-widow spider and to watch them die the excessively painful death which resulted. However, although the inclusion of invertebrates in the ambit of the bill is logical enough, it simply is not practical politics. If British experience is any guide, the time must be drawn between vertebrates and invertebrates, if there is to be any hope of eventually rallying enlightened scientific opinion behind the desired reforms. In this matter we have to be guided not by rigorous logic but by what is practicable of the existing level of ethics.

Believe me, with repeated thanks for the honor of testifying to your committee,

Yours sincerely,

C. W. HUME.

ANIMAL WELFARE INSTITUTE,
New York, N.Y., October 1, 1962.

Hon. KENNETH ROBERTS,
Chairman, Subcommittee on Health and Safety, House Committee on Interstate and Foreign Commerce, House Office Building, Washington, D.C.

DEAR CONGRESSMAN ROBERTS: We appreciate the opportunity to correct some of the misunderstandings which might arise from statements made by opponents of H.R. 1937 at the recent hearings.

Dr. Maurice Visscher and Dr. Bennett Cohen both sought to convince the committee that legislation such as the British act of 1876 has no effect upon the welfare of animals. Dr. Cohen stated, it "makes not one iota of difference." Yet he was seated in full view of two machines used in the United States but not in Britain: the Noble-Collip drum for tumbling animals such as rats and rabbits, the Blalock press for crushing dogs' legs.

Further, both Dr. Cohen and Dr. Visscher are employed by institutions where large numbers of dogs are caged in small cages with no provision for exercise. Dogs are never housed thus in British laboratories. Congress has already expressed its view on this question through an appropriation to get the test beagles of the Food and Drug Administration out of basement cages from which the dogs are never released for exercise.

Dr. Cohen claims the care of animals in laboratories is improving, that there have been greater advances in the past few years than in the previous 150 years. But the buildings in the University of Michigan and University of Minnesota noted above where dogs are caged perpetually are both recently constructed—the Minnesota building with a reported 700 dogs in subbasement cages was completed in 1961.

I recently went through the animal quarters of different departments of the University of Michigan Medical School with Dr. Cohen and Mr. Kenneth Yourd and was interested in the comment of the latter that it is strange that the best dog quarters (those of the physiology department) were constructed 40 years ago. These old quarters have outdoor runways connected with inside kennels

equipped with resting boards for the dogs to lie on. But dogs used by the departments of surgery and pathology were in new buildings in ill-smelling windowless rooms without any provision for exercise, and some of the dogs were so big they could not even lie down in normal resting position in these cages.

Dr. Cohen claims that "dissemination of information," as in the journal published by the animal care panel, is the only way to bring about "humane care." This journal does sometimes print humane and practical articles. It is important to note, however, that it also prints articles such as the one quoted in my testimony on how to keep monkeys immobilized in monkey chairs from which they are never removed for as long as 5 months at a stretch. Dr. Cohen says, "The word 'humane' is not a static thing." Yet I venture to say that at no time in history has even a society of illiterate barbarians thought it "humane" to use the stocks. Immobilization has from time immemorial been used for purposes of punishment. Confinement of men to cages in which they could neither lie nor stand in normal position was a recognized form of torture in French dungeons. It is disheartening to see experimental dogs casually thrust into cages in which they can neither stand nor lie normally, and I have seen such dogs in 6 different scientific institutions in New York City alone. For example I recently saw an old English sheep dog and several crossbred dogs under such cruel conditions in the Downstate Medical Center of the University of the State of New York of which Dr. Robert A. Moore, who appeared at the hearings in opposition to H.R. 1937 is dean. Like the other quarters mentioned, these are recently constructed.

These animals are theoretically protected by a law similar to the one praised by Dr. Visscher in Minnesota, whereby laboratories are licensed and given access to impounded dogs. The hopeless inefficacy of this legislation in preventing even the crudest abuses is demonstrated by the above notes and by testimony submitted by Mrs. Frank Wilson on the filth and overwhelming infestation of ticks and other insects in the animal quarters of a leading New York hospital licensed under the Hatch-Metcalf Act.

Legislation licensing laboratories alone cannot control cruelty even at the lowest level. Each individual scientist who uses animals must be licensed if legislation to prevent needless and senseless suffering in laboratories is to be enforced.

Experimental work cannot be removed from the humane requirements of the bill without making a mockery of it, for it is in experimental work that the most terrible suffering is inflicted. At present there is nothing to keep suffering within the bounds of decency and reason. Federal law is necessary to accomplish this aim.

The cost of administering the British act, which carefully regulates pain infliction, licenses each person using animals, and registers the institutions using them, is small indeed considering the tremendous saving of suffering that it accomplishes. I am informed that the cost in 1 recent year was approximately $60,000. It would be somewhat higher now owing to the addition of one more inspector. Last year the 6 inspectors, all of whom are medically qualified, paid an average of 3 visits to each licensed institution of which there are 524 in Britain. Following are numbers of institutions using animals and Federal funds in the United States. It will be seen that while the numbers of animals used is much greater here, the numbers of institutions affected by H.R. 1937 are only about 2¾ times more than those covered in Britain, thus the cost of administration could not possibly be considered as a barrier to enactment of this bill which should be passed on humane grounds, and which will save a great deal of money now being unnecessarily spent in unproductive ways, as for example, in repetitive experiments on sick animals.

Institutions receiving grants from the National Institutes of Health in 1961 (in the United States)---------- 1,007

(These include the Nation's 71 medical schools, 17 veterinary medical schools, 47 dental colleges, and many hospitals and research institutes of a nonprofit character. There are 26 commercial firms participating in the cancer chemotherapy program financed by Government funds.)

Government laboratories using animals:

National Institutes of Health	8
Veterans' Administration hospitals using animals	85
Food and Drug Administration	2
Army research and development laboratories	54
Navy research and development laboratories	48
Air Force research and development laboratories	13
Agricultural experiment stations	51
Agricultural diagnostic laboratories	194
Total	1,462

I hope that this letter may be included in the printed record of the hearings.

Sincerely,

CHRISTINE STEVENS.

THE GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE,
DEPARTMENT OF PHYSIOLOGY,
Washington, D.C., October 3, 1962.

THE CONGRESS OF THE UNITED STATES,
House of Representatives,
Committee on Interstate and Foreign Commerce,
Washington, D.C.

MR. CHAIRMAN AND COMMITTEE MEMBERS: I wish to submit the documents which accompany this letter for inclusion in the record of your hearing on H.R. 1937 and H.R. 3556 which took place on September 28 and 29, 1962. I was present on the first day of the hearing, and had requested permission to testify orally, but was not able to do so because of the crowded schedule.

The documents enclosed are (1) a copy of the statement which I planned to make orally in opposition to the two bills, (2) a letter from a colleague at the University of Maryland in opposition to the proposed legislation, (3) a copy of a longer letter to individual members of the committee sent by myself and my colleagues in physiology at the George Washington University, in which our objections to the proposed bills are given in some detail.

I hope that these documents will be of help to the committee in determining what action is to be taken regarding legislation dealing with animal experimentation.

Respectfully submitted.

EUGENE M. RENKIN,
Professor and Chairman.

THE GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE,
DEPARTMENT OF PHYSIOLOGY,
Washington, D.C., September 28, 1962.

THE CONGRESS OF THE UNITED STATES,
House of Representatives,
Committee on Interstate and Foreign Commerce.

MR. CHAIRMAN AND COMMITTEE MEMBERS: As a physiologist engaged in animal experimentation, I should welcome constructive legislation to regulate the use of animals in biological and medical research. Unfortunately, the bills presently under consideration by this committee, H.R. 1937 and H.R. 3556, are aimed simply at curtailment of animal experimentation, with complete disregard for the benefits to mankind which derive from it. From their wording and their specific provisions, it is evident that they were drawn up under the influence of individuals inflexibly committed to the belief that experimentation on living animals is reprehensible, even though alleviation of human suffering and prolongation of human life may result from such experiments. The present bills would legalize the harassment of biological and medical scientists by antivivisectionists and interfere with the important work going on in our great research institutions.

I wish to recommend that this committee consult with recognized leaders in biological and medical science to formulate constructive legislation to regulate the use of animals, legislation designed not to obstruct research, but support and facilitate the progress of medical science and its benefits to mankind.

Respectfully submitted.

EUGENE M. RENKIN,
Professor of Physiology.

UNIVERSITY OF MARYLAND,
College Park, September 27, 1962.

The effect of the proposed legislation would have extensive inhibitory effects both on the effective training of future scientists and on essentially all phases of research of developmental zoology. The properties and influencing factors on living systems can only be investigated by the use of a living system. Currently in my laboratory, it is essential that fish, amphibians, birds, and small mammals be freely available for study. They are used with due respect that they are living animals and entitled humane treatment. The restriction on use of these animals at the present time could affect facets of research related to each of the following: the origin and genesis of natural immunity; the surgical transplantation of substitute tissue; the effect of long-term gravitational stress and the mapping and possible function of certain poorly understood elements of the nervous system.

I am fundamentally opposed to the obstruction of the use of lower animal by qualified investigators whose primary dedication is the enforcement of the knowledge of life and the ultimate betterment of that life.

GORDON M. RAMM,
Associate Professor of Zoology.

AMERICAN MEDICAL ASSOCIATION,
Chicago, Ill., September 28, 1962.

Hon. KENNETH A. ROBERTS,
Chairman, Subcommittee on Health and Safety,
Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. ROBERTS: The following statement is submitted on behalf of the American Medical Association with respect to H.R. 1937 and H.R. 3556, 87th Congress.

The American Medical Association endorses the laudable, very acceptable, stated purpose of these bills, namely, "to provide for the humane treatment of animals used in experiments and tests * * *." However, we consider the bills now under consideration by your subcommittee objectionable and likely to cause serious interference with, and irreparable harm to, the conduct of highly important research.

The measures provide for procedures which will adversely affect research. Although the legislation applies only to research performed under Government support, inasmuch as federally supported research accounts for the majority of medical and biological research now being done, its impact would be extremely serious.

Perhaps the most serious provision of this legislation is the requirement that all research plans be filed in such form as the Secretary of Health, Education, and Welfare might prescribe, describing the nature and purposes of the project and the procedures to be employed. Research is by its very nature not completely predictable. It proceeds step by step, each step depending on the results of the preceding step. Since succeeding steps may alter the procedures, nature, and purposes of the project at unpredictable intervals, the foregoing requirement would result in confusion, delay, frustration, inefficiency, failure to follow promising leads, and the eventual abandonment of many valuable projects. If an investigator knew in advance all the steps to be taken, he would be making demonstrations, not pursuing research.

The people of our Nation enjoy the highest standards of medical care in the world. This is one of the direct results of the world leadership of the United States in medical research. Most medical and biological research depends on the use of animals in experiments and tests. Animals have benefited quite as much from research as humans with the conquest of such deadly maladies as hepatitis, cholera, and rabies. Virtually all medical advances—antibiotics, hormones, vaccines, new surgical procedures—trace directly to animal experimentation. Scientists, before all others, must be concerned with the humane treatment of animals, because any deviation may well vitiate the experiment and the result.

These bills do not reflect the actual methods and procedures used in research, particularly medical and biological research. This legislation implies a shocking and unjustified indictment of scientists and doctors which is unwarranted. The implication of the proposals is that, far from being concerned with bringing possible relief and benefit to mankind, and indeed to animals, such physicians

and scientists are mean, cruel, and sadistic, requiring police action to control them. Existing State and municipal laws, university rules and regulations, codes of ethics, and the actual requirements of proper scientific research are adequate to secure and protect the objectives of the proposed legislation.

It should be recognized that these bills offered in the name of humane treatment for animals offer no constructive provision for the advancement of the science and are of animal care, no provision for training in animal laboratory care, no provision for the interchange of information on laboratory animal care, and no provision for better facilities for laboratory animal care.

All of the limited abuses in the care of laboratory animals which may exist can and are being corrected through responsible scientific efforts. Such institutions and organizations as the Institute of Laboratory Animal Resources, National Research Council; the Animal Care Panel; the American Board of Laboratory Animal Medicine; the American Association of Medical Colleges; the American Association for the Advancement of Science; the American Hospital Association; and the National Society for Medical Research, as well as the American Medical Association, have in action or under study programs to help insure the safe, humane treatment of laboratory animals. Voluntary efforts such as these accomplish the objective of providing for "the humane treatment of animals used in experiments and test." The proposed legislation, in our opinion, does not.

We thank you for giving us the opportunity to express the views of the physicians of America on these important bills. We respectfully request that this statement by the American Medical Association be included in the record of the hearings on H.R. 1937 and H.R. 3556, 87th Congress.

Sincerely yours,

F. J. L. BLASINGAME, M.D.

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES,
Washington, D.C., October 17, 1962.

Congressman KENNETH A. ROBERTS,
Chairman, Subcommittee on Health and Safety, Committee on Interstate and Foreign Commerce, Washington, D.C.

DEAR CONGRESSMAN ROBERTS: I am enclosing a copy of a letter to me from Dr. James D. Ebert, president-elect of the American Institute of Biological Sciences, in which he expresses his concern over the impact upon biological and medical research of the passage of the so-called Moulder and Griffiths bills or any others which might have the same provisions. I respectfully request that this very fine statement be made a part of the record of testimony which was recently conducted by your subcommittee.

Yours very truly,

HIDEN T. COX, *Executive Director.*

Enclosure.

CARNEGIE INSTITUTION OF WASHINGTON,
DEPARTMENT OF EMBRYOLOGY,
Baltimore, Md., October 16, 1962.

Dr. HIDEN T. COX,
Executive Director, American Institute of Biological Sciences, Washington, D.C.

DEAR HIDEN: I have completed a careful examination of bills H.R. 1937 (by Mrs. Griffiths) and H.R. 3556 (by Mr. Moulder). In my study I have been aided by a detailed comparison and evaluation of the bills prepared by my colleague, Bent G. Böving, M.D., and other members of our staff, and by a similar comparison prepared by the Legislative Liaison and Reference Section, Office of Program Planning, National Institutes of Health. In the latter document, the similarities and differences in the bills are stated effectively as follows:

SIMILARITIES

"Both bills provide for issuance by the Federal Government of certificates of compliance as a prerequisite to use of research animals by specific laboratories, and the issuance of licenses to persons authorized to conduct, in such laboratories, experiments involving use of live animals. Both require submission and acceptance by the Federal Government of individual project plans prior to initiation of a given experiment involving animals, and both require annual reporting.

Both bills would provide investigation systems of the Federal Government to assure compliance with the act, and both establish certain standards for treatment of research animals, to be supplemented by further Federal Government regulations."

DIFFERENCES

The principal differences between the two bills are as follows:

1. The Griffiths bill would place administration in the hands of the Secretary of Health, Education, and Welfare; the Moulder bill would create a new executive agency, headed by a Commissioner to be appointed by the President and required to have been admitted to practice law in the Supreme Court of the United States and not to have had any connection with any laboratory.

2. The Griffiths bill would require certification of Federal grantees; the Moulder bill would require certificates of Federal grantees, laboratories from which the Federal Government makes purchases, and Federal agencies and instrumentalities.

3. The Griffiths bill would require the Secretary to provide reinstatement procedures to be applicable after withdrawal of certificate for noncompliance; the Moulder bill would make any noncomplying laboratory ineligible thereafter for such certificate.

4. The Griffiths bill would require the Secretary of Health, Education, and Welfare to make public notice of uncorrected noncompliance by any Federal agency; the Moulder bill would require public notice of uncorrected noncompliance by a Federal agency, such agency to be thereafter ineligible to use Federal funds for experiments involving use of animals.

5. According to the Griffiths bill, the Secretary would determine qualifications for issuance of licenses to personnel using research animals; the Moulder bill limits validity of such licenses to 1 year and specifies certain minimum qualifications (including holding of a doctoral degree in medicine, veterinary medicine, physiology, psychology, or zoological science.)

6. Standards provided by the Moulder bill are greater in number and some are stricter in concept than those of the Griffiths bill."

In my judgment, neither of these bills is in the best interest of the American people. They do not contribute to the general health and welfare, but tend rather to divert efforts away from the efficient attainment of these objectives.

Let me amplify these general statements. The basic urge to protect living animals against unnecessary fear and pain is shared by all of us. Over the years the management of animal experimentation has been the responsibility of individual investigators, physicians, and teachers, with such professionally informed persons having the authority to organize whatever programs, and conduct whatever experiments, best serve scientific and medical progress, and thus the welfare of the public, future as well as present. With that responsibility goes another charge, that of insuring the welfare of the animals being used, so far as that is consistent with the primary objective, but not at the expense of the primary objective. These bills make the primary objective, the efficient practice of animal experimentation, impossible.

I should emphasize that animal experimentation is necessary. I would not mislead the public: without such experimentation, medical advance would be thwarted. One need cite only the recent tragic story of thalidomide to emphasize the urging of more, not less, animal experimentation. Moreover there is a risk of pain, even death, in experiments. Who would deny it? It is for that very reason that animals are used. But they are used humanely as far as possible. The proposed legislation would serve only to render more difficult an already difficult task.

We all recognize the propriety of asking an overtly anxious parent or relative to remain outside the operating room when a loved one is being treated, not because we are unsympathetic, but because intense emotion and the voluble expression of it actually give neither comfort nor protection to the patient—in fact, they impede treatment and lessen the chance of recovery.

These bills, too, appear to be based on emotion. They subordinate the wisdom of the investigator and physician, hence the general welfare, to the emotion of a sympathetic onlooker. The advancement of medicine and science is impeded.

Perhaps it will be helpful if I illustrate these points, selecting just a few out of many highly objectionable features, drawn from H.R. 3556.

(1) One requirement alone would bring most of the animal research in this country to an immediate halt; anesthetics would be administered only by a

licensed veterinarian or a doctor of medicine qualified in anesthesiology, or a graduate medical school student under the immediate supervision of one of the former. Practically all research in university departments of agriculture, and biology, a large part of research in departments of animal husbandry and medicine, almost all animal research in colleges and high schools would be impossible if this condition were imposed.

(2) The bill would apply to any living creature of any vertebrate species and of any other species capable of developing a conditional response; hence even many animals used in simple elementary, junior high, and high school experiments—one-celled animals like *Paramecium*, simple creatures like flatworms, for according to recent evidence, even these may be conditioned—would be included. Also consider that applications for a certificate would be required to study the octopus and squid (and these would have to be anesthetized by a qualified veterinarian or medical anesthesiologist).

(3) Failure to comply with these or numerous other such regulations would result in suspension of a certificate and, would cut off all grant support to the laboratory. There is no provision for reinstatement.

In summary, these bills bear titles that suggest that they will provide for humane treatment of animals used in research by recipients of grants from the United States, and by agencies and instrumentalities of the United States. They have both general and specific faults that make it uncertain that their stated objectives will be accomplished, yet make it certain that money, effort, and time intended for biological, medical, and veterinary research, teaching, testing, and production of materials, and consequent improvement of practice, would be distracted from their principal objectives by being administratively encumbered, delayed, and made more expensive.

Yours sincerely,

JAMES D. EBERT.

NATIONAL SOCIETY FOR MEDICAL RESEARCH,
Rochester, Minn., October 4, 1962.

MR. W. E. WILLIAMSON,
Clerk, Committee on Interstate and Foreign Commerce, House of Representatives, New House Office Building, Washington, D.C.

DEAR MR. WILLIAMSON: I am grateful for your many favors to allow spokesmen from the fields of biology, medicine, and agriculture to state their case last Friday. It was a mistake on our part not to follow through on the panel presentation. You certainly did your part to help us bring clear understanding to a muddled issue.

Dr. C. A. M. Hogben neglected to turn in the enclosed statement from Lord Lister when he spoke.

Another exhibit that was turned in but not explained was the text of the German law that parallels the Moulder and Griffiths proposals. Perhaps you should have the following background on the German law.

The German law was adopted soon after Hitler came into power. It was sponsored by Hermann Goering who was honorary president of the German National Antivivisection Society.

The text of the German law is not in itself severe, but during the Nazi regime it was administered quite harshly. Meanwhile Dachau and Auswitz became monuments to the antivivisectionist ideal.

Even today in Germany this law presents some restrictions on animal research. Ironically there are no similar restrictions on experiments on human subjects. This is the most significant fact behind the thalidomide tragedy.

I am glad that Congressman Harris' committee advanced action to correct this condition in the United States.

Sincerely,

RALPH A. ROHWEDER,
Executive Secretary.

LETTER TO PROF. W. W. KEEN OF PHILADELPHIA FROM LORD JOSEPH LISTER, PIONEER OF ASEPTIC SURGERY IN REGARD TO THE BRITISH LAWS REGULATING ANIMAL EXPERIMENTATION

"LONDON, ENGLAND, *April 4, 1898.*

"MY DEAR SIR: I am grieved to learn that there should be even a remote chance of the legislature of any State in the Union passing a bill for regulating experiments upon animals.

"It is only comparatively recently in the world's history that the gross darkness of empiricism has given place to more and more scientific practice; and this result has been mainly due to experiments upon living animals. It was to these that Harvey was in large measure indebted for the fundamental discovery of the circulation of the blood, and the great American triumph of general anesthesia was greatly promoted by them. Advancing knowledge has shown more and more that the bodies of the lower animals are essentially similar to our own in their intimate structure and functions; so that lessons learned from them may be applied to human pathology and treatment. If we refuse to avail ourselves of this means of acquiring increased acquaintance with the working of that marvelously complex machine, the animal body, we must either be content to remain at an absolute standstill or return to the fearful haphazard ways of testing new remedies upon human patients in the first instance which prevailed in the dark ages.

"Never was there a time when the advantages that may accrue to man from investigations in the lower animals were more conspicuous than now. The enormous advances that have been made in our knowledge of the nature and treatment of disease of late years have been essentially due to work of this kind.

"The importance of such investigations was fully recognized by the Commissioners on whose report the act of Parliament regulating experiments on animals in this country was passed, their object in recommending legislation being professedly only to prevent possible abuse. In reality, as one of the Commissioners, the late Mr. Erichsen, informed me, no single instance of such abuse having occurred in the British Islands had been brought before them at the time when I gave my evidence, and that was towards the close of their sittings. Yet in obedience to a popular outcry, the Government of the day passed an act which went much further than the recommendations of the Commissioners. They had advised that the operation of the law should be restricted to experiments upon warm-blooded animals; but when the bill was considered in the House of Commons a Member who was greatly respected as a politician but entirely ignorant of the subject matter suggested that "vertebrated" should be substituted for "warmblooded," and this amendment was accepted by a majority as ignorant as himself.

"The result is that, incredible as it may seem, anyone would now be liable to criminal prosecution in this country who should observe the circulation of the blood in a frog's foot under the microscope without having obtained a license for the experiment and unless he performed it in a specially licensed place.

"It can be readily understood that such restrictions must seriously interfere with legitimate researches. Indeed, for the private practitioner they are almost prohibitive, and no one can tell how much valuable work is thus prevented.

"My own first investigations of any importance were a study of the process of inflammation in the transparent web of the frog's foot. The experiments were very numerous and were performed at all hours of the day in my own house. I was then a young, unknown practitioner; and if the present law had been in existence, it might have been difficult for me to obtain the requisite licenses; and even if I had got them, it would have been impossible for me to have gone to a public laboratory to work. Yet without these early researches, which the existing law would have prevented, I could not have found my way among the perplexing difficulties which beset me in developing the antiseptic system of treatment in surgery.

"In the course of my antiseptic work at a later period I frequently had recourse to experiments on animals. One of these occurs to me which yielded particularly valuable results, but which I certainly should not have done if the present law had been in force. It had reference to the behavior of a thread composed of animal tissue applied antiseptically for tying an arterial trunk. I had prepared a ligature of such material at a house where I was spending a few days at a distance from home; and it occurred to me to test it upon the carotid artery of a calf. Acting on the spur of the moment, I procured the needful animal at a neighboring market; a lay friend gave chloroform, and another assisted at the

operation. Four weeks later the calf was killed, and its neck was sent to me. On my dissecting it, the beautiful truth was revealed that the dead material of the thread, instead of being thrown off by suppuration, had been replaced, under the new aseptic conditions, by a firm ring of living fibrous tissue, the old dangers of such an operation being completely obviated.

"I have referred thus to my personal experiences because requested to do so; and these examples are perhaps sufficient to illustrate the impediments which the existing law places in the way of research by medical men engaged in practice, whose ideas, if developed, would often be the most fruitful in beneficent results.

"But even those who are specialists in physiology or pathology, and have ready access to research laboratories, find their work very seriously hampered by the necessity of applying for licenses for all investigations and the difficulty and delay often encountered in obtaining them. Our law on this subject should never have been passed and ought to be repealed. It serves no good purpose and interferes seriously with inquiries which are of paramount importance to mankind.

"Believe me,

"Sincerely yours,

"LISTER."

STATEMENT OF HIRAM E. ESSEX, PH. D., PRESIDENT OF THE NATIONAL SOCIETY FOR MEDICAL RESEARCH IN OPPOSITION TO LEGISLATION THAT WOULD CREATE OBSTRUCTIONS AND COMPLICATIONS RATHER THAN AUTHORIZING CONSTRUCTIVE ACTION FOR THE ADVANCEMENT OF LABORATORY ANIMAL CARE

The National Society for Medical Research is comprised of 672 organizations and institutions concerned with research in biology and medicine. The NSMR is the instrument through which the many scientific groups cooperate in a program to build public understanding and support for experimental research in biology and medicine.

When legislation was introduced in Congress to limit, license, and police research with animals, representatives of the organizations that make up the NSMR met to analyze the legislation. The conclusion was that the ostensible purposes of the legislation were unquestionably desirable—this despite the fact that of all the association man has had with animals—in the wild, on farms, in zoos and in our homes—none is so careful, so elaborate, so expensive as the care of laboratory animals. But even this is not good enough from the standpoint of scientists whose work can be made even more productive by better and better laboratory animal husbandry. Therefore, scientists want maximum progress in laboratory animal care.

A second conclusion was that most mishaps in laboratory animal care are like accidents in industry. They are caused by improper methods, inadequately trained personnel, and unsuitable equipment and facilities. The solutions to these problems require constructive programs of research, training, communication, and building.

A third conclusion was that certification of animal laboratories by the Animal Care Panel and exercise of disciplinary forces by professional societies represent the most efficient way to approach the needle-in-a-haystack problem of fare willful neglect. Once-a-year visits by Federal inspectors are unlikely to be effective, and efforts to make a Federal police program intensive enough might do much more harm than good. Furthermore, the enormous cost might better be devoted to constructive programs for the perfection of laboratory animal care.

The group found nine specific objections to the negatively oriented restrictive legislation proposed by Representatives Moulder and Griffiths.

(1) Presumably the proposals to police medical and biological research were introduced on the assumption that, at the present time, there exists significant mistreatment of animals in research and teaching laboratories. This is a false assumption. It is insulting to the men who are devoting their lives to scientific research and to the administrative officials in charge of the various institutions where research employing animals is done. If the committee is in doubt about this matter, an investigation should be ordered before regulatory or punitive measures are considered.

(2) It is not reasonable to assume that police inspectors could be hired who would be wiser, kinder, and better qualified technically to supervise the

conduct of scientific research than are the university presidents, deans of medical schools, directors of research institutes, and academic department heads who now bear responsibility for the character of animal research in the United States.

(3) The bills to regulate research offer no constructive provisions for improving laboratory animal care but, on the contrary, provide numerous handicaps and hazards to scientific investigation. No provisions are made for research to develop better methods, training to develop better qualified personnel and appropriations for better facilities.

(4) The Griffiths bill states that, "* * * living vertebrate animals * * * shall be used only when no other feasible and satisfactory methods can be used to ascertain biological and scientific information for the cure of disease * * *". Strictly interpreted this would stop all medical and biological research except on plants and microbes for many years until scientists could be sure that every possibility for the use of such lower forms of life in the solution of medical problems has been exhausted. Then and only then could the full range of modern research methods be employed.

(5) Both proposals for Federal regulation of research include the provision that no experiment or test on living animals shall be performed unless a detailed project plan is approved by Federal authorities. The project plan must describe in advance all procedures to be employed with respect to living animals. This provision assumes that the investigator knows, in advance, each step in his research program. Such is not the case. The general objective is known, but the method of attack develops as the work progresses. Fruitless avenues are abandoned and new and developing leads followed as they open up. Indeed, the entire objective may be abandoned in favor of some newer objective that has come into view as the work progresses. The stringent regulation proposed would stifle real exploratory research and favor more perfunctory technological exercises where the outcome is already known in advance.

(6) The two proposed laws to regulate research demand that records be kept of experiments, that animals be identified in relation to these experiments and that the disposition of animals also be recorded. Annual reports based on these records are to be made to Washington. Presumably the records to be maintained and the reports to be made are in addition to the already extensive records essential to the collection and reporting of scientific data. It is likely, therefore, that these scientifically useless reports would approximately double the burden of recordkeeping in conjunction with research. Not only would allocations for research be drained away in the employment of extra secretarial help, but also in Washington large numbers of clerks would have to read, sort, and file a mountain of such useless reports.

(7) The proposed laws would authorize the appointment of inspectors with authority to examine the records of individual scientists and to stop investigation if, in the judgment of the inspectors, the plans outlined in advance had not been followed accurately. The inspectors obviously would have great power that could be misused to strangle research.

(8) In discussing proposed special policing of scientists, Prof. Maurice B. Visscher has made use of the following useful analogy: "Cruelty to children is and should be a crime. Some parents have been known to abuse their children. However, we do not, and I hope will not, set up governmental licensing bureaus to regulate which families may have children and to snoop on all homes to catch those infinitesimally few parents who beat their babies. We who love children know that such an espionage system would destroy more values than it would salvage." All of the 50 States in the Union have statutes prohibiting cruelty to animals. In every instance these laws govern the work of medical scientists as well as other citizens.

(9) The United States leads the world in medical research. This leadership not only makes our Nation healthy and strong, it makes the United States a great world benefactor, for discoveries made here alleviate suffering and save lives everywhere. Much of the progress in medical science in the United States is due to substantial governmental support of research. The value of governmental support depends in great degree upon care to avoid excessive bureaucratic pressures that could make Government support more destructive than beneficial. The object of research is innovation and innovation demands a reasonable degree of freedom. Indeed, it is undoubtedly true that the great achievements of the American people in science and technology since the founding days of the Republic have been due more to the free political environment of the United

States than to any other factor. Here unregimented minds have been free to create, and they have created more new things than any society that ever has existed on this earth. It is important to understand how closely the scientific leadership of the United States is tied to America's historic abhorrence of regimentation.

The group concluded that much can be done by the Federal Government to speed progress in the care and use of experimental animals in scientific laboratories. Public concern and congressional concern about laboratory animal welfare could result in programs that will be of real value to investigators working with animals. Four areas in which Federal support would aid biological science are:

Research in laboratory animal husbandry. There are almost no objective data, for instance, on the space and exercise requirements for dogs used in chronic experiments.

Training for laboratory animal care personnel. There is a critical need for more veterinarians trained especially in laboratory animal medicine. There is a need for better qualified animal technicians and caretakers.

Communication of the latest information about animal care methods is handled primarily by the Animal Care Panel. However, the ACP has limited resources and needs additional funds in order to do an optimum job.

Building of better animal care facilities is both a financial and a technical problem. Costly mistakes are sometimes made in the design of new facilities and an expanded program of technical guidance is indicated.

Our position might be summarized by saying that scientists engaged in the merciful work of alleviating suffering and prolonging life need Federal help not Federal harassment in order to do still a better job.

NATIONAL SCIENCE TEACHERS ASSOCIATION,
Washington, D.C., October 5, 1962.

Hon. KENNETH A. ROBERTS,
House of Representatives,
Washington, D.C.

DEAR SIR: The National Science Teachers Association is an organization of some 20,000 science teachers, the largest organization of its kind in the world. Among the objectives of these teachers in their teaching of science to our children is one that is concerned with the love, care, and humane treatment of animals. Hence our interest in any legislation concerned with the inhumane treatment of animals. Specifically, we refer to the proposed Moulder bill (H.R. 3556) and to the Griffiths bill (H.R. 1936), both of which deal with animal experimentation.

After due consideration of the bills, the association wishes to go on record as being opposed to them. Although there are many reasons for this position, several of the more important ones are indicated below:

Our experience and observations in the use of laboratory animals do not seem to necessitate new legislation at this time.

The provisions of the bills will place unqualified persons, since no laboratory experience is required of them, in positions of supervision and enforcement of laboratory practices.

The provisions of the bills will impose a great deal of needless paperwork on research people, thereby hindering rather than aiding their endeavors.

The bills make no provision for research in animal care, for the education of technicians working with experimental animals, or for the improvement of animal laboratory facilities.

The restrictions imposed by the provisions of these bills may well lead to premature clinical testing of drugs and techniques on human beings without previous conclusive and safe animal results.

Historically, advances in medicine and biology have been accomplished through animal experimentation. To hamper the proper use of these animals for this purpose can only be construed as a disservice to our country.

Very truly yours,

C. MICHAEL ADRAGNA
(For the Board of Directors).

P.S.—Please include this letter as part of the hearing record.

THE UNIVERSITY OF MICHIGAN,
MENTAL HEALTH RESEARCH INSTITUTE,
Ann Arbor, Mich., October 4, 1962.

HON. KENNETH A. ROBERTS,
House Office Building,
Washington, D.C.

DEAR MR. ROBERTS: I hope that the following statement can be included in a record of the hearings on the Moulder and Griffiths bills:

"Dear Congressman Roberts, allow me to express to you my very deep conviction that incalculable harm would be done by any form of legislation which puts further limitations upon animal research beyond those ethical constraints now in operation. Most of the remarkable advances of medicine, pharmacology, and the basic biological sciences within recent decades have been based fundamentally upon animal research. Without such research the prolongation of human life and the decrease in illness and the improved living conditions of our modern age would have been utterly impossible. In my professional and scientific lifetime I have had an opportunity to visit many of the chief research centers in this country and many others. I have seen at first hand that invariably the care of animals is humane, in terms of the well-recognized ethical standards for animal care which are universally known throughout the scientific community. In my estimation these ethical constraints constitute sufficient policing. Animals are not needlessly sacrificed nor are they needlessly subjected to pain or other unpleasant circumstances. Everything consistent with the purposes of research is done to guarantee their comfort.

"It seems to me unthinkable in the 20th century that Congress should give any serious attention to the limitation of animal research which has contributed so much to human betterment."

Respectfully yours,

JAMES G. MILLER, M.D., Ph. D.,
Director.

VIRGINIA POLYTECHNIC INSTITUTE,
Blacksburg, Va., October 5, 1962.

HON. KENNETH A. ROBERTS,
Chairman, Subcommittee on Health and Safety,
House of Representatives, Washington, D.C.

MY DEAR MR. ROBERTS: I am writing in connection with H.R. 1937, known as the Griffiths bill, and H.R. 3556, known as the Moulder bill. I hope my comments can be included in the testimony on these two bills. Dr. H. T. Cox, executive director of the American Institute of Biological Sciences, has informed me that this procedure has been cleared with the committee's staff chief.

I agree that all animals used in research should be comfortably housed, well fed, and humanely handled. In fact, only when animals are so handled are the results of research valid. Scientists who must depend upon animal experimentation to obtain facts and develop principles for the benefit of mankind are as much concerned about the welfare of their animals as is anyone else. The abuses which the bills purport to correct are in the extreme minority.

I feel that the proposed legislation is unnecessary in the first place and, if passed, will create an enormous burden on an already overworked group of scientists. There is no doubt that progress in developing facts needed to alleviate human suffering and disease and insuring an adequate food supply for an undernourished world would be seriously impeded.

The research program of our agricultural experiment station, and others like it in every State, would be severely hampered by such legislation. Our animal genetics studies designed to improve breeds, our studies of nutrition designed to improve diets and feeding practices, our research in veterinary science which is concerned with developing effective methods for controlling animal diseases, and our studies of methods of controlling parasites and insects attacking animals are examples of our research program that would be unduly, and I believe unnecessarily, hampered. The end loser, of course, is mankind.

Finally, there are, I would guess, two or three hundred thousand persons who are doing research that would come under the proposed legislation. I seriously question the wisdom of legislation, requiring large expenditures of money, and imposing unnecessary restrictions on scientists that, in the final analysis, is aimed at correcting abuses by a very small number of persons in large groups.

Respectfully yours,

WILSON B. BELL, *Dean of Agriculture.*

AMERICAN ACADEMY OF PHYSICAL EDUCATION,
October 4, 1962.

Hon. KENNETH A. ROBERTS,
Subcommittee on Health and Safety, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. ROBERTS: This letter is in reference to the Moulder (H.R. 3556) and Griffiths (H.R. 1937) bills presently being considered by your subcommittee. I would appreciate having this letter included with the record of testimony relating to these bills.

Any action taken by Congress with respect to animal experimentation should, in our opinion, be constructive rather than restrictive in nature. The great contributions of animal experimentation to human health and welfare as well as to the welfare of animals are well know. Constructive action by the Government can assure humane treatment of experimental animals while advancing rather than restricting health advances in the United States.

We are appreciative of the opportunity to place this statement on the record.

Sincerely,

FRED V. HEIN, Ph. D.,
President, American Academy of Physical Education.

MICHIGAN DEPARTMENT OF HEALTH,
Lansing, Mich., October 1, 1962.

Hon. KENNETH A. ROBERTS,
Congress of the United States,
Washington, D.C.

DEAR CONGRESSMAN ROBERTS: Thank you for your kindness shown to me and to Mr. Pat Ford during our visit to Washington last week.

We are enclosing a copy of the Michigan statute on humane use of animals, together with a copy of the rules and regulations adopted thereunder.

Act 241 is administered by an advisory committee composed of several interests and has now been in effect since 1947, with no problems and fine acceptance by all concerned.

Sincerely,

ALBERT E. HEUSTIS.

Enclosures.

ACT NO. 241, P.A. 1947

AN ACT, To protect the public health and welfare; and to regulate the humane use of animals for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical, and biological sciences, and the testing and diagnosis, improvement, and standardization of laboratory specimens, biologic products, pharmaceuticals, and drugs.

The people of the State of Michigan enact:

SECTION 1. The public health and welfare depend on the humane use of animals for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical and biological sciences, and the testing and diagnosis, improvement and standardization of laboratory specimens, biologic products, pharmaceuticals and drugs.

SEC. 2. The State commission of health, with the approval of an advisory committee appointed by the Governor consisting of the dean of the medical school of the university of Michigan, the dean of the veterinary department of the Michigan State College of Agriculture and Applied Sciences, the dean of the Medical School of Wayne University, the dean of the dental school of the University of Detroit, the secretary of the Michigan Board of Registration of Osteopathy, a representative from a research laboratory within the State of Michigan and subject to the control of the Federal Security Agency, and two member representatives of the State federated humane society, is hereby authorized to regulate and to promulgate rules and regulations controlling the humane use of animals for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical and biological sciences, and the testing and diagnosis, improvement and standardization of laboratory specimens, biologic products, pharmaceuticals and drugs. Such rules and regulations shall be adopted in conformity with the laws of this State.

SEC. 3. The State commissioner of health is hereby vested with the administration of the provisions of this Act and is authorized to incur such expenses as shall be authorized by the legislature. The members of the advisory committee shall serve without compensation, but shall be entitled to actual and necessary expenses incurred in performance of official duties.

SEC. 4. The State commissioner of health, or his duly authorized representative, or any member of the advisory committee, is hereby authorized to inspect any premises or property on or in which animals are kept for experimental purposes, for the purpose of investigation of compliance with the rules and regulations adopted hereunder. Such regulations shall provide for such humane treatment of animals as is reasonably necessary for the purposes of this Act.

SEC. 5. No person, firm, copartnership, association, or corporation shall keep or use animals for experimental purposes unless registered to do so by the State commissioner of health. The State commissioner of health is hereby required to grant registration for the humane use of animals for experimental purposes subject to compliance with the rules and regulations promulgated under the provisions of this Act. The State commissioner of health is authorized to suspend or revoke any registration under the provisions of this Act for failure to comply with the rules and regulations promulgated hereunder. The findings of fact made by the State commissioner of health acting within his powers shall, in the absence of fraud or arbitrariness, be conclusive, but the circuit court of the county of Ingham shall have power to review questions of law involved in any final decision or determination of said commissioner: *Provided*, That application is made by the aggrieved party within thirty days after such determination, and the said court shall have jurisdiction to make such orders in respect thereto as justice may require.

SEC. 6. There is hereby appropriated from the general fund of the State the sum of $1,000 to the State commissioner of health to carry out the provisions of this Act.

MICHIGAN REGULATIONS FOR THE HUMANE USE OF ANIMALS

1. Application for registration shall be made in writing to the State commissioner of health and in addition to the name and business address of the applicant, it shall contain the names and qualifications of those persons who are responsible to the applicant for the proper care or use of animals under the provisions of this act.

2. Before granting any requested registration, the State commissioner of health shall be satisfied that the applicant has adequate facilities, and personnel qualified by professional training or experience, to assure the humane use of animals in accordance with these regulations.

3. Each registrant shall from time to time, upon written request by the State commissioner of health, furnish a current list containing the names, and qualifications of the persons mentioned in the first regulation.

4. That portion of the premises of each registrant which is employed in connection with the keeping or use of animals for investigational purposes shall be inspected annually at such times as may be designated by the State commissioner of health.

5. Interim inspections may be made at such other times as may be specifically directed by the State commissioner of health.

6. The person making the inspection shall display his credentials and his authorization from the State commissioner of health.

7. Every person who participates in an inspection pursuant to the laws and regulations shall promptly report in writing his findings to the State commissioner of health.

8. All animal quarters shall be kept in sanitary condition. Care, consistent with the type of investigation being conducted, shall be given in all cases to assure the comfort of animals.

9. Any surgical operation which is likely to cause greater discomfort to the animals than that attending anesthetization shall not be undertaken until the animal be first rendered incapable of perceiving pain at the operative site. The animal shall be maintained in that condition until the operation is completed.

10. Anesthetization shall not be required as a condition precedent to the performance of any particular investigation, operation, or treatment if such would not normally be administered were a like operation to be performed or treatment administered to adult humans.

11. If at the conclusion of the investigation the animal cannot live without permanent pain or prolonged discomfort, it shall be painlessly destroyed.
12. Postoperative care for the relief of pain and discomfort shall be of a nature similar to that given in veterinary hospitals.

MICHIGAN DEPARTMENT OF HEALTH.

LANSING, MICH., *April 1960.*

Mr. ROBERTS. I want to thank all of you for your attendance and we will leave the record open for 10 legislative days.

The hearing is adjourned.

(Thereupon, the hearing was adjourned at 11:25 a.m.)

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