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ANIMAL HEALTH RESEARCH

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HEARINGS

BEFORE THE

SUBCOMMITTEE ON LIVESTOCK AND GRAINS

OF THE

COMMITTEE ON AGRICULTURE

HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

FIRST SESSION

ON

H.R. 3286

NOVEMBER 13 AND 14, 1973

Serial No. 93-MM

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WASHINGTON : 1974

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ANIMAL HEALTH RESEARCH

TUESDAY, NOVEMBER 13, 1973

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON LIVESTOCK AND GRAINS
OF THE COMMITTEE ON AGRICULTURE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10 a.m., in room 1302, Longworth House Office Building, Hon. Thomas S. Foley (chairman) presiding.

Present: Representatives Foley, Sisk, Melcher, Denholm, Gunter, Zwach, Price, Sebelius, Findley, Thone, Symms, and Johnson.

Also present: Representatives Rarick and Roy.

Steve Allen, staff consultant; L. T. Easley, press assistant; and Perry Shaw, subcommittee clerk.

Mr. MELCHER. The Subcommittee on Livestock and Grains will come to order.

[H.R. 3286 introduced by Mr. Melcher follows:]

[H.R. 3286, 93d Cong., 1st sess.]

A BILL To authorize the Secretary of Agriculture to encourage and assist the several States in carrying out a program of animal health research

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act shall be known as the Animal Health Research Act.

PURPOSE

SECTION 1. It is the purpose of this Act to promote the general welfare through improved health and productivity of domestic livestock, poultry, and other income-producing animals so essential to the Nation's food supply and the welfare of producers and consumers of animal products; to prevent disease epidemics that would be disastrous to the American livestock and poultry industries and our food supply; to minimize losses due to sickness and diseases of livestock and poultry; to protect human health through control of animal diseases transmissible to humans; to improve the health of companion animals which support an industry of major economic importance and which contribute significantly to the quality of family life; and otherwise to promote the general welfare through expanded programs of research to improve animal health. It is recognized that the total animal health research efforts of the several State colleges and universities and of the Federal Government are more fully effective if there is a close coordination between such programs, and it is further recognized that colleges of veterinary medicine and departments of veterinary sciences, and animal pathology, and similar units conducting animal health research in the agricultural experiment stations are especially vital in the training of research workers in animal health.

SEC. 2. In order to carry out the purposes of this Act, the Secretary of Agriculture is hereby authorized to cooperate with the several States for the purpose of encouraging and assisting them in carrying out programs of animal health research at eligible institutions.

DEFINITIONS

SEC. 3. As used in this Act:

(a) "Eligible institutions" shall include all accredited colleges of veterinary medicine and at institutions where there is no college of veterinary medicine, agricultural experiment stations eligible to receive assistance under the Hatch Act, as amended in 1955 (69 Stat. 671), which have departments of veterinary science or animal pathology, or similar units conducting animal health research: *Provided, however*, That when a new college of veterinary medicine is formed, the Secretary, after consultation with the Advisory Board shall provide for the orderly transfer of support in such manner that the eligible institution in that State will thereafter conform to this definition.

(b) "Dean" shall mean dean of a college of veterinary medicine. "Director" shall mean director of an agricultural experiment station at institutions where there is no college of veterinary medicine.

(c) "State" shall mean all States and Puerto Rico.

(d) "Secretary" shall mean the Secretary of Agriculture.

(e) "Advisory Board" shall mean a Veterinary Medical Science Research Board appointed by the Secretary of Agriculture which shall be constituted of not less than nine or more than twelve members selected from individuals nominated by and selected so as to give equal representation to respectively (1) accredited colleges of veterinary medicine, (2) veterinary science or animal pathology departments or similar units conducting animal health research at other eligible institutions, and (3) to representatives of national livestock and poultry organizations.

(f) "Animal health research capacity" shall mean the capacity of an eligible institution to conduct research on animal diseases as measured by a formula to be developed and applied by the Secretary with the advice of the Advisory Board. The Secretary's formula will provide a figure for each eligible institution which will be used in determining that institution's relative capacity to perform such research as a percentage of the total national capacity of all such institutions to conduct animal health research.

SEC. 4. (a) To support continuing research programs at eligible institutions, the Congress is hereby authorized to appropriate such funds as it may determine to be necessary. Funds appropriated under this section shall be used to meet expenses of conducting research, publishing and disseminating the results of such research, of contributing to retirement of employees subject to the provisions of an Act approved March 4, 1940 (54 stat. 39), of administrative planning and direction, and for the purchase of needed equipment and supplies and the alteration or renovation of buildings necessary for conducting research.

(b) Funds appropriated under this section shall be apportioned as follows:

(1) Four per centum shall be retained by the United States Department of Agriculture for administration, program assistance to the States, and program coordination.

(2) Forty-eight per centum shall be distributed to eligible institutions in the proportion that the value of domestic livestock and poultry in each State where such institution is located, bears to the total value of domestic livestock and poultry in the United States according to the latest published United States Department of Agriculture statistics. The Secretary will determine the total value and the proportionate value of domestic livestock and poultry for each State with guidance of the Advisory Board from the latest inventory of all cattle, sheep, swine, horses, and poultry published by the United States Department of Agriculture.

(3) Thirty-eight per centum shall be distributed among the States in proportion to the animal health research capacity of each State, and 10 per centum shall be distributed by the Secretary on the basis of need for expanded research capacity.

(4) In no case shall the amount paid to an eligible institution on the basis of livestock and poultry values exceed three times the amount paid to that institution on the basis of animal health research capacity.

(5) When a State has two or more eligible institutions, the funds available for that State under this section shall be apportioned between or among those institutions in proportion to their animal health research capacity as defined in section 3(f).

(6) The sums distributed on the basis of proportionate value of domestic livestock and poultry (b) (4) above and proportionate animal health research capacity (b) (5) above in the first appropriation under this Act and like sums

appropriated in subsequent years shall be based on the latest available data on National and State livestock values and research capacities, and any sums in addition to the initial appropriation level appropriated in subsequent years shall be distributed on the basis of value of domestic livestock and poultry values and animal health research capacities in the years those additional sums are first appropriated: *Provided*, That sums available to an eligible institution will not be decreased because of subsequent changes in the proportionate value of domestic livestock and poultry values and animal health research capacities.

SEC. 5. (a) To support research on specific national or regional animal health problems, the Congress is hereby authorized to appropriate such funds as it shall determine to be necessary. Funds appropriated under this section shall be used to pay costs of conducting research and other costs provided for in section 4(a).

(b) Funds appropriated under this section shall be allocated by the Secretary to eligible institutions for work to be done as mutually agreed upon between the Secretary and the eligible institutions. In developing plans for the use of these funds, the Secretary shall consult the Advisory Board.

SEC. 6. (a) To support costs of providing veterinary medical science research facilities, the Congress is hereby authorized to appropriate such sums as it determines to be necessary. Funds provided under this section shall be used to purchase land, construct or remodel buildings, and to buy and install necessary research and research related equipment.

(b) Funds appropriated under this section shall be apportioned among States and eligible institutions in the same manner as funds apportioned under section 4(b), except that, to meet specific national or regional animal health research needs, additional funds may be appropriated to provide animal health research facilities at one or more eligible institutions as mutually agreed upon in each case between the Secretary and the eligible institution: *Provided*, That, in developing plans for the use of these additional funds, the Secretary shall consult the Advisory Board.

SEC. 7. Sums available for allotment under the terms of this Act shall be paid to each eligible institution at such times and in such amounts as shall be determined by the Secretary, and at the availability for use by the dean or director during the fiscal year it is appropriated and one additional fiscal year, except that sums available under section 6, shall be available for the year in which appropriated plus three additional years.

SEC. 8. When the Secretary determines that a State or an eligible institution is not eligible to receive its allotment of funds because of a failure to satisfy requirements of this Act or regulations issued under it, the Secretary shall withhold such amounts; the facts and reasons therefor shall be reported to the President and the amount involved shall be kept separate in the Treasury until the close of the next Congress. If the next Congress shall not direct such sum to be paid it shall be carried to surplus.

SEC. 9. At a time and in a manner to be designated by the Secretary, the dean and director of each eligible institution will be directed to appoint a local committee to review local project proposals for research on priority problems of animal health which comply with the purpose in section 1 and for use as specified in section 4(a) and with general guidelines for project eligibility to be provided by the Secretary with the advice of the Advisory Board. Research proposals reviewed by the local committees and approved by the dean or director will be submitted to the Secretary with a brief outline abstract summary which will reveal compliance with the purpose of this Act and the Secretary's general outlines.

Each dean or director shall also submit a brief annual report of research accomplishments on a project-by-project basis and he shall account for all funds allotted to his institution under the provisions of this Act at such times and on such forms as the Secretary shall prescribe. If any portion of the allotted moneys received shall by any action or contingency be diminished, lost, or misapplied, it shall be replaced by the State concerned and until so replaced, no subsequent appropriation shall be allotted or paid to said college or university.

SEC. 10. The Secretary is authorized to prescribe such rules and regulations as may be necessary to carry out the provisions of this Act and to furnish such advice and assistance as will best promote the purposes of this Act. The Secretary is further directed to appoint the Advisory Board.

The Advisory Board shall meet at least annually to advise the Secretary with respect to administration and implementation of this Act and to recommend priorities for conduct of research programs authorized under this Act.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., October 26, 1973.

Hon. W. R. POAGE,
Chairman, Committee on Agriculture,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request of February 13, 1973, for a report on H.R. 3286, a bill "To authorize the Secretary of Agriculture to encourage and assist the several States in carrying out a program of animal health research."

This Department recommends that the bill not be enacted. Adequate legislative authority already exists for the Department to carry out essential features which would be provided in the bill.

The Department is well aware of the importance which animal health holds in this Nation's agricultural economy and the need for continuing support of animal health research. The specific provisions of H.R. 3286, however, would present a number of problems which we feel can be avoided by continuing to fund animal health research under our current programs, including P.L. 89-106, as we now fund the Black Colleges of 1890. The formula proposed in H.R. 3286 does not take into account the income from livestock which would significantly alter allocation among States. Provision for matching funds a very important feature assuring strength and State commitment in our programs—it omitted. And the determination of research capacity of institutions as a basis for allocation could be highly subjective. There are, in addition, many technical improvements that would be necessary in the language.

For the reasons stated, and in recognition of the existing support programs relating to animal health, the Department does not favor the enactment of H.R. 3286.

Sincerely,

J. PHIL CAMPBELL,
Acting Secretary.

Mr. MELCHER. This morning I am going to fill in for Chairman Foley and, if he is able to come, he will be a few minutes late.

I will, at this point, read into the record Mr. Foley's statement.

Our meeting today is to hear testimony reporting H.R. 3286 introduced by a member of the subcommittee, the gentleman from Montana.

The bill is addressed to the problem of the enormous annual loss of livestock and poultry in this country, estimated at \$3 billion annually.

The bill authorizes the Secretary of Agriculture to administer a grant program for research and research facilities needed in solving the health problems of livestock, poultry and companion animals.

The recipients of the funds would be the colleges of veterinary medicine and State agricultural experimental stations. Funds would be distributed according to a formula provided in the bill, and there is an additional provision for an advisory board to make recommendations concerning the relative animal health research capacity of the recipient institution.

That is the end of Mr. Foley's statement.

I am the principal author of this bill. I have been joined by several of my colleagues as cosponsors. This is the type of legislation that is going to, if we pass it, fill in a blank spot in the proper research of animal diseases.

The purpose of this proposed legislation is to authorize a new system of support of research on animal health and thereby increase the research effort on these problems. It provides for a basis for funding of colleges of veterinary medicine and of departments of veterinary science or animal pathology in colleges of agriculture or other similar units conducting animal health research in the State experiment stations.

Research in veterinary medicine has contributed heavily to our understanding of many health problems. Some of the advances in cancer control, some of our knowledge of cardiovascular disease, and some of the new dramatic surgical procedures can be attributed to such research. The incidence of some of the diseases common to man and lower animals has been dramatically reduced. Bovine tuberculosis and bovine brucellosis once were rather common reservoir of infections for humans causing diseases of people, but are now very rare due first, to effective research, second, the knowledge developed by that research and third, animal disease control programs to eradicate the disease reservoirs in livestock.

The colleges of veterinary medicine and the departments of veterinary science have sources of funds for their research related to some of the human health problems. Funds for such work are available through the National Institutes of Health and from several other sources.

While I am proud to be a member of a profession which has contributed extensively to the advancement of human health, I am concerned that too little research is being done to reduce the effects of animal disease on the availability and the costs of foods of animal origin. The present systems of supporting agricultural research are inadequate with respect to encouraging and supporting research leading to more effective control and prevention of animal disease.

Our country can't afford to lose \$4 billion or perhaps much more every year due to animal diseases. These losses are being absorbed by consumers paying unduly high costs for meat, poultry, milk, and eggs. We now face potential shortages in food supplies. We must act now to assure that positive steps are taken toward long-range goals of reducing animal disease losses and increasing the efficiency of the whole system of supplying foods of animal origin. Many diseases of animals have not yet been attacked effectively and food losses resulting from such diseases can no longer be tolerated.

If research efforts are to be productive, they must have some assurance of continuity. Much of the present animal disease research is conducted on short-term funding. Under these circumstances, a research team may be about to the point of potentially valuable findings when the financial support ends. After this happens to them a few times, they will very likely turn their attention to problems for which there are better chances of continuing support.

Many of the advances in agriculture and forestry may be attributed to research supported from funds provided under the authority of the Hatch Act as amended in 1955 and the McIntyre-Stennis Act of 1962. These authorities provide reasonable assurance of financial support for research in State experiment stations and in State schools of forestry. With this base of support, many of the most talented research people have been able to devote time to problems and to produce results of great value.

While animal disease research is supported to some extent from funds administered under the Hatch Act, there is no uniformity of such support among the schools and colleges, there is no reasonable assurance in many cases of continued support, and the total effort is inadequate to solve the problems. I have been assured that, if we pass this type of legislation, the Association of American Veterinary Medical Colleges will work in cooperation with the Experiment Sta-

tion Committee on Organization and Policy to formulate programs consistent with the provisions of these proposals and will present these for consideration of the Department and the Congress. I have also been assured that in the development of these programs the American Veterinary Medical Association will give its active support. Many of the livestock industry associations, which are vitally concerned over the lack of adequate research on animal disease control and prevention, have indicated to me that they enthusiastically support this type of legislation.

In short, there is no real system of coordinated research in veterinary medicine among the veterinary colleges and their research centers and the veterinary research labs around the country.

SUMMARY OF ANIMAL HEALTH RESEARCH ACT (HR 3286)

Set up procedure for appointment by Secretary of Agriculture of 9-to-12 member Veterinary Medical Science Research Advisory Board, equally representative of: accredited colleges of veterinary medicine; veterinary science or animal pathology departments or similar units conducting animal health research at other eligible institutions; and national livestock & poultry organizations.

Advisory Board to meet at least annually.

Authorize Congress to appropriate funds for support of continuing research programs (Sec. 4) and facilities (Sec. 6) based on the following formula:

Four percent retained by USDA for administration, state program assistance and program coordination.

Forty-eight percent distributed to eligible institutions based upon the proportional value of livestock and poultry in the state where each institution is located compared with the total U.S. livestock and poultry. (Allocations to be made in consultation with Advisory Board.) (Latest USDA statistics to be used.)

Thirty-eight percent distributed among states in proportion to animal health research capacity. (Formula to be devised by Secretary and Advisory Board.)

Ten percent by the Secretary on the basis of need for expanded research.

Authorize Congress to appropriate funds for supporting research on specific national or regional animal health problems. (Sec. 5) Secretary would allocate funds in consultation with Advisory Board and in agreement with eligible institutions.

Directs Secretary to set up local program proposal review committees at each eligible institution and for annual reports by Deans and Directors.

Mr. MELCHER. I would also like to briefly summarize some of the points of the proposed act. It would set up a procedure for appointment by the Secretary of Agriculture of a 9- to 12-member Veterinary Medical Science Research Advisory Board equally representative of accredited colleges of veterinary medicine, veterinary science or animal pathology departments or similar units conducting animal research at other eligible institutions and representatives of national livestock and poultry organizations. From these groups will be chosen by the Secretary of Agriculture an advisory board. That advisory board would meet at least annually but could meet oftener, and probably would.

That board would make decisions on what type of research would be done, which specific institutions it would be done in, and whether the type of research would be of a regional nature and so on. For instance, in my area of Montana we have a problem of calf death losses that is crying out for research. Every time a calf dies, after it is born, those of us here well realize what that means in the total production chain. How helpful it would be if we could solve through research the problem of saving these calves from what we now call, for lack of a better name, calf death syndrome.

The bill would authorize Congress to appropriate funds for support of continuing research programs and facilities, based on the following formula: Four percent retained by USDA for administration, State program assistance and program coordination; 48 percent distributed to eligible institutions based upon the proportional value of livestock and poultry in the State where each institution is located, compared with the total U.S. livestock and poultry. And that is where the advisory board serves again because the allocations would be made in consultation with the advisory board, appointed by the Secretary of Agriculture; 38 percent distributed among States in proportion to animal health research capacity. Those States that have capacity, for instance, a veterinary college with an excellent veterinary research lab connected with it, would obviously have a greater capacity for health research and that is recognized in the proposed formula. Ten percent distributed by the Secretary on the basis of need for expanded research.

I think we will find today that our witnesses are, for the most part, in favor of this legislation. We will be hearing from the Department of Agriculture. They sent a rather skimpy letter and I hope each member of the committee has it before them.

The Department always seems to have trouble with new ideas. This isn't necessarily a new idea though. It has been an idea that has just been ignored too long.

The Department's report is entirely unsatisfactory. Even if they are in opposition, they ought to state their reasons for opposition clearly.

Mr. ZWACH. Do we have a copy of the Department's report?

Mr. SEBELIUS. We have a letter.

Mr. MELCHER. Do we have a copy of it?

Mr. SEBELIUS. We have a letter.

Mr. MELCHER. Yes, here.

Mr. ZWACH. Thank you.

Mr. MELCHER. And if they have recommendations for correcting the bill they should have included it in the report.

We will hear from their witness, and perhaps when we hear from him we can question him thoroughly on that point.

Our first witness today is the Honorable Robert L. Leggett from California.

Bob, the subcommittee is delighted to have you with us today.

STATEMENT OF HON. ROBERT L. LEGGETT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. LEGGETT. Thank you very much, Mr. Chairman.

I preliminarily want to congratulate you on the excellent job you consummated in another committee yesterday, which I think is probably in the national interest. I think that the job that we are attempting today is probably just as important as the job related to the energy crisis.

I do have some prepared remarks that got put out of my office in red, white, and blue, which you can see there, but, normally, we don't do that.

Let me just start into the remarks a little bit and then I will make some comments.

Mr. Chairman, the bills you have under consideration this morning hold the promise of relief from animal disease that is long overdue to American livestock and consumers alike. My own State of California has, of course, a very large stake in such legislation, but I am not anxious to take a parochial view of a matter that touches such a vital national concern.

Many respected institutions and people have been attempting to call attention to a severity of this problem before now. The National Academy of Sciences has stated that American livestock continues "under the threat of highly infectious and devastating diseases from abroad" for which we lack adequate means of prompt detection and treatment. Further, the Academy states that "many chronic, infectious, parasitic, toxic, metabolic, nutritional, reproductive, genetic, degenerative, and neoplastic diseases and disorders of animals in the United States have not yet been attacked effectively," and the "food loss for which these diseases are responsible is too great to be accepted."

How great is too great to be accepted? The U.S. Department of Agriculture has stated that "Infectious diseases represent the single greatest hazard to the production of an adequate and wholesome supply of animal protein." Quantified, the problem comes down to this: The estimated loss of livestock and poultry due to animal disease alone is \$3 billion annually, or 10 percent of the total value of U.S. livestock. And I suspect that is exclusive of the coyote threat and the food supply that we provide there.

The recent consumer boycott of meat is a clear indication that the American public has reached the end of its patience with the effects of these diseases on food prices—and indirectly this correlates with a short food supply caused by disease and other activities—and properly so; it is incumbent on us, then, to do what we can to rescue both consumers and livestock men from the spot between the rock and the hard place in which they currently find themselves.

I have no doubt that the research moneys envisioned for this program can and will be put to good use. In my own district we have one of the finest teaching and research facilities for veterinary medicine in the United States at the University of California at Davis. It is a modern plant with high caliber students working under one of the finest international faculties anywhere in the field, and Dean Bill Pritchard tells me that all he lacks are the funds to gear up a vast and productive research effort in the area of animal disease.

California, of course, does have a large stake in such a measure. We do use Federal funds, we could use more Federal funds. We account for 7½ percent of the livestock and poultry industry there and our share of the losses runs to about \$230 million annually. In addition, our horse population has soared and that is a \$12 billion national industry. I, of course, refer in my statement to the Venezuelan Equine Encephalitis we had last year and the New Castle disease in the egg-laying industry, and its effects in this rather mass production industry that we have had to resort to in order to keep in the egg and poultry and turkey business in the State of California.

I would state this: I have appeared annually with representatives from the University of California, with Dr. Todd and some of the other people from veterinary institutions, and appeared before Dan Flood's committee seeking to get additional funds for animal research. It ap-

pears that animal research many times is part of the soft underbelly of the area that is cut in the HEW appropriations and in that one appropriations bill that I suspect will be on the floor today in the form of perhaps \$1 billion or \$1.3 billion over the President's budget, there will be funds for animal research but that animal research funding will be essentially directed towards health of humans and not necessarily health of livestock. I believe that to sit back and say, well, this is a \$38 billion industry and we may suffer \$3 billions worth of annual losses, but we are moving ahead rather emphatically with a \$15 million annual program to the schools of veterinary medicine is ridiculous. This spreads out to perhaps \$300,000 or \$400,000 per school and that spreads mighty thin.

I think if we want to do something about disease in American agriculture, we have to move forward in a rather bold way. I know that it has been said that we don't have any money and, certainly, the bill that comes up today with whatever funds are in it for animal research will probably be vetoed and I suspect that we will not be able to override this veto, means we will be continuing on a continuing type of resolution program which means that we will be approaching the inadequate method that we have had in past legislative bills.

We know that there is money available. We had to provide \$1 billion to the State of Israel in the last month and we found the money to do it. Israel has asked us for \$2.7 billion and we have approved \$970,000 million and I suspect that over the next month we are going to be approving perhaps a \$2 billion program there.

The Department of Defense has said we did a great job in getting the tanks over to Israel, and that we need a revitalized airlift command, and so forth, and so they say we need more C-5A's. They don't tell us that will be at about \$75 million a copy, I suspect, if they reopen the lines down at Marietta, Ga. And it is true they helped. They brought one tank over there to Israel to demonstrate that could be done, but those vehicles still are marginal in their overall capacity but still the Department of Defense wants \$2 billion to \$3 billion additional for defense programs.

And Mr. Schlesinger is going to be testifying before my House Armed Services Committee, I know very shortly, on the importance and the critical need to expand the \$85 billion defense budget because of this \$2 billion or \$3 billion augmentation we will be sending to the State of Israel.

I don't understand when domestic departments come before this committee and say that \$15 million is the limit of the total national capability as far as a domestic program like this, how the administration can do that. I think we have to revitalize our priorities and we have to reorientate many of our priorities. We have to move ahead in health and education and poverty and this here area that we are talking about today is merely a microcosm of some of the larger problems that face the country.

I yield back the balance of my time.

Mr. MELCHER. Thank you, Bob. Your comments concerning the availability of funds are certainly well made. The gentleman from California, Mr. Sisk.

Mr. SISK. No questions. I always welcome my colleague from California. I know of his interest and I join him in his concern about this particular problem.

Mr. MELCHER. A question from the gentleman from Minnesota?

Mr. ZWACH. No questions.

Mr. MELCHER. The gentleman from South Dakota?

Mr. DENHOLM. I commend our colleague for his testimony. I am familiar with the School at Davis and the excellent work accomplished there.

There are presently 8 million barren cows slaughtered annually in this country. If one-half of them produced one calf a year that would result in a 13-month supply of beef in every calendar year. You are reporting on research that will produce essential results. You are contrasting constructive results with the nonproductive results of warfare as opposed to domestic programs. That is the reasoning of your analogy between the two, is it not?

Mr. LEGGETT. Exactly. Barren cows aren't as dramatic as a C-5 landing a tank, but I think overall they are both important to the interests of Americans.

Mr. DENHOLM. If just half of the barren cows had calves there would be 4 million more calves which would result in 2.5 billion pounds of more red meat (beef) in the domestic retail markets.

Mr. LEGGETT. And that would be dramatic, I think.

Mr. DENHOLM. It is unfortunate that the Department of Agriculture opposes proposed legislation to correct the economic wrong and increase productivity.

Mr. LEGGETT. What you ought to ask them is: How much for research was asked in the pending budget and how much it was cut down by the Secretary and then how much it was cut down by OMB on the first time around, and then how much on the second time around? And I think what you will find is, if they are doing their job, they have been cut down rather radically. And what you are trying to do through this bill is to re-enforce their efforts to move ahead in this field.

Mr. DENHOLM. Is it true they impounded \$39 million appropriated for animal health and research under existing programs this year?

Mr. LEGGETT. Probably in just this one area. We have impounded, of course, overall against some \$18 billion of contract authority including items in the Department of Defense, I might add.

Mr. DENHOLM. Do we still spend money in the Defense Department for germ warfare?

Mr. LEGGETT. Oh, yes, that is still an important area, although certainly it is not as emphasized as it was some time ago.

Mr. DENHOLM. Is it within your knowledge as to how much is being spent on germ warfare annually?

Mr. LEGGETT. We were doing all kinds of research on disease and strangely enough we were doing research up to a few years ago on African diseases in Cairo with defense money. I, personally, killed a program of research at the University of Zujov, I think it was, in Belgrade, Yugoslavia, which, since we are oriented against Yugoslavia in NATO we thought it was more prudent to carry on some of that research in the United States.

But there is money available in defense for research and \$8.5 billion and, as a practical matter, it is the normal amount we use in various services. And certainly the money we spend there for research is totally incomparable to the money spent in the Department of Agriculture.

Mr. DENHOLM. I shall not take more time other than to again commend the gentleman from California for his statement in support of the legislation. Thank you very much.

Mr. MELCHER. The gentleman from Kansas?

Mr. SEBELIUS. Thank you. I see we have a list here of about nine other witnesses who have come a long way and, therefore, I will not respond to certain remarks made by the chairman, or the gentleman from California, so that we can hear from the witnesses from the veterinary schools.

I yield back the balance of my time.

Mr. MELCHER. The gentleman from Florida?

Mr. GUNTER. No questions.

Mr. MELCHER. The gentleman from Illinois?

Mr. Findley?

Mr. FINDLEY. Mr. Leggett, I am not aware of any great effort in the Agriculture Subcommittee on Appropriations or on the floor to provide more money for animal research. I think it should be done and I would like to suggest we all combine forces to see that it is done.

Mr. LEGGETT. I think that is one of the appropriations bills that is amendable on the House floor and I think we ought to be interested in that.

Mr. FINDLEY. Thank you.

Mr. MELCHER. I might add that cosponsors of the bill, H.R. 9554, are Mr. Daniels, Mr. Price, Mr. Sims, Mr. Rarick, on this subcommittee; Mr. Bergland and Mr. Mayne on the full committee, Mr. Sisk—excuse me, Mr. Sisk, you are one of the sponsors, too, and it is encouraging that Neal Smith of Iowa and William Scherle of Iowa, both on the Appropriations Committee, are also cosponsors.

Mr. FINDLEY. Mr. Chairman, could I ask one more question?

Mr. MELCHER. Certainly.

Mr. FINDLEY. If more money could be appropriated to existing programs in this field, would this be a satisfactory answer to the problems?

Mr. LEGGETT. Of course money is not the solution to all problems. As we know, it takes brainpower and coordinated approach and more than that it takes a continuity of programs. But I think you have real experts here that are prepared to respond to that.

Mr. MELCHER. The gentleman from Nebraska?

Mr. Thone?

Mr. THONE. No questions.

Mr. MELCHER. The gentleman from Colorado?

Mr. JOHNSON. No questions.

Mr. MELCHER. The gentleman from Idaho, the cosponsor?

Mr. SYMMS. No questions.

I would ask unanimous consent to include in the record a statement from the Idaho Wool Growers Association, and its president, R. J. Rich.

Mr. MELCHER. Without objection, the gentleman's statement will be entered into the record at this point.

[The statement of Mr. R. J. Rich follows:]

STATEMENT OF ROSCOE J. RICH, PRESIDENT, IDAHO WOOL GROWERS ASSOCIATION

The sheep industry in Idaho and the rest of the United States is in a state of crisis. This crisis stems from a number of factors including the increased cost

of sheep production attributable to inflation, lack of adequately trained personnel such as sheep herders, increased losses due to predation and continued serious losses due to animal diseases.

In this statement, I would like to address only the problem of losses due to diseases. Over the years, the Idaho Wool Growers Association has been a strong supporter of animal disease research at the University of Idaho. We have seen the Department of Veterinary Science gradually increase its research capabilities in such areas as pathology, virology and immunology. However, at the same time, there has also been an increased demand for animal disease research. Not only research on diseases of sheep, but on other species including cattle and wildlife. Thus the increases in the program within the Department of Veterinary Science at the University have not been great enough to allow an all out attack on the major disease problems which plague the Idaho sheep industry.

It is true that there has been progress in the development of vaccines to prevent vibriosis and enzootic abortion of ewes, in the development of programs to prevent white muscle disease and in the control of coccidiosis of lambs. However, many additional problems remain to be solved.

In many instances research results available today suggest solutions to specific disease problems which can be achieved by additional research. Examples of this would be the development of vaccines to control footrot, coccidiosis, salmonellosis and polyarthritis. It appears that additional research could and should result in the development of vaccines, treatments, or management practices which will effectively prevent or control these specific diseases.

Research on calf scours has resulted in the isolation of a number of viral agents and the production of at least one effective vaccine. A similar research effort directed towards the solution of lamb scours problem would very likely yield viral agents which could be incorporated into vaccines which would alleviate at least a portion of the severe lamb scours losses which the sheep industry of Idaho experiences annually.

It also appears that there is a great area of need for study of diseases which are, or may be inter-transmissible between wildlife and domestic animals, such as tularemia and rabies. Transmission of tularemia from rabbits to sheep is not an uncommon occurrence in Idaho and in some years the industry experiences severe lamb losses due to this disease.

It is my firm conviction that most disease losses are preventable and that adequate funding of animal disease research will result in the development of programs for the control of the major diseases which plague the Idaho sheep industry. Further, I am convinced that this is one of the areas in which efficiency of production of lamb and wool can most quickly and easily be increased. Only by this increased efficiency will it be possible to continue to produce red meat at a price that the consumer feels he can afford.

I, therefore, strongly urge Congress to pass and adequately fund this legislation.

Mr. MELCHER. Without objection, I will submit statements submitted to me on this particular bill of Dr. Floyd Frank, Dr. George C. Shelton and William Robert Edwards.

Hearing no objection, so ordered.

[The statements referred to follow:]

STATEMENT OF FLOYD W. FRANK, PROFESSOR AND HEAD, DEPARTMENT OF
VETERINARY SCIENCE, UNIVERSITY OF IDAHO

During recent years a large portion of the research conducted by colleges of veterinary medicine and departments of veterinary science has been directed toward human health related disease problems using animals as models for human diseases. Much less effort has been directed towards the solution of animal health problems per se.

This preoccupation with human disease has been the result of the availability of funds for human health research through a variety of governmental and non-governmental sources and a lack of comparable funding for study of animal disease problems. This lack of funding is partly attributable to the fact that colleges of veterinary medicine are separate administrative units from colleges of agriculture and, therefore, frequently do not receive substantial funding for animal health research from U.S. Department of Agriculture sources. The combination of these factors has resulted in a situation where the best research minds

in veterinary medicine have been looking toward the solution of human disease problems.

There is, therefore, a need for a source of funding for research on animal diseases for the sake of solving animal disease problems and increasing the efficiency of production of our food animal industries. Reduced efficiency in the production of meat results annually from animal diseases. It is very likely that the greatest opportunity for increasing efficiency of production of food animals and thus reducing or holding down the price of meat to the consumer is through reduction in disease losses. Therefore, I feel that at this time when consumers are extremely concerned about increasing meat prices it would be appropriate for the Congress of the United States to take action to encourage research which would reduce disease losses.

Idaho, along with the other western states, is a major producer of red meat and the livestock industries are extremely important in the economy of all the western states. Thus when we speak about increasing efficiency in the production of red meat we are talking about increasing the efficiency of production in one of the major agricultural industries of the west.

Concerning specific aspects of research, there is a great need to develop adequately staffed animal health research facilities in the western states. These research facilities would need to be staffed with specialists in such fields as virology bacteriology, pathology, epidemiology, toxicology, physiology and anatomy. For these specialists to be effective, they would need adequate technical support in terms of technicians to assist in the conduct of the research and funding for the purchase of supplies, equipment and research animals.

In short, we need to be able to bring the functional potential of veterinary science departments and colleges of veterinary medicine to levels that make possible effective investigation of all aspects of animal diseases in a manner which will quickly and efficiently lead to solutions of these important disease problems.

Some of the more pressing of these problems are diseases of newborn calves and lambs, and diseases which cause failure of reproduction either through rendering the animal sterile, causing failure of conception, abortion or the birth of stillborn calves and lambs. Following are some diseases which deserve immediate attention: mastitis (bluebag of ewes, footrot of sheep, calf and lamb scours, coccidiosis, weak calf syndrome, pinkeye of cattle, bovine viral diarrhea, vibriosis and enzootic abortion of ewes, pneumonias of cattle and sheep, salmonellosis, waterbelly or urolithiasis and caseous lymphadenitis of sheep.

There is also a great need to increase the capability for research in the area of toxicology, particularly as it relates to environmental pollution and human food and animal feed safety. It is my firm conviction that the consumer not only expects but demands that agricultural research assume responsibility for assuring that both animal and plant products produced for human consumption are not only nutritious but safe from a toxicological point of view.

In summary, the economy of all the western states leans heavily on the food animal industries. Reduction or elimination of loss of animals due to disease would greatly improve the efficiency of the industry in providing food. Most or all of these animal diseases are preventable by techniques which we now have the technology to develop. Thus, dramatic short-term benefits in increased efficiency of production of red meat can result from an increase in funding for animal disease research. Because of this, I urge you to give favorable consideration to the Animal Health Research Act and to provide adequate funding for this research.

FLOYD W. FRANK, D.V.M.

TEXAS A. & M. UNIVERSITY,
COLLEGE OF VETERINARY MEDICINE,
College Station, Tex., October 24, 1973.

HON. JOHN MELCHER,
Congress of the United States,
House of Representatives,
Washington, D.C.

DEAR REPRESENTATIVE MELCHER: Your introduction of the Animal Health Research Act, HR 3286, is greatly appreciated by the staff of the College of Veterinary Medicine.

We do not take lightly our share of responsibility for the health and productivity of the livestock of Texas and the southwest. Producing and feeding the most cattle of any state, Texas is a major contributor to the nation's food supply. The

efficiency of these operations obviously has a major influence on the national supply and price of beef. Texas is blessed with most of the essentials for livestock production; land, water, climate, feed, facilities and cattlemen. The least controllable essential for efficient production is animal health. There is roughly a two percent death loss of cattle in feedlots plus a much greater loss of productivity from disease. Nationally, disease and parasites reduce livestock productivity by an estimated 11 percent.

If the United States is to provide an adequate meat supply for its rapidly growing population, animal disease must be controlled. Further, if the U.S. is to help meet the emergency needs of a world grossly deficient in animal protein or take advantage of the opportunities for the exportation of animal products, we must reduce the burden and threat of disease.

While American veterinarians are certainly among the world's best, they are dependent upon research for their fund of knowledge and the tools for preventive medicine and therapy.

That animal health research and its application is a sound investment is apparent from the observation that with only some 40 percent of the world's livestock in the developed countries they produce 80 percent of the world's meat, milk and eggs. Underdeveloped countries faced with many diseases and less veterinary service frequently lose from 30 to 50 percent of the potential livestock production.

U.S. veterinarians in veterinary colleges and state experimental stations have the incentive and the competence to solve the animal disease problems if they are given the opportunity; an opportunity for consistent research support so that they can pursue a disease until the tools are developed for its control and eradication.

It is obviously unreasonable for a nation whose research has made it a leader in most fields of science and industry to neglect the research essential to its food supply.

We are grateful, Representative Melcher, that you are doing something about it.

Sincerely yours,

GEORGE C. SHELTON, *Dean.*

OCTOBER 29, 1973.

Congressman JOHN MELCHER,
Longworth House Office Building,
Washington, D.C.

SIR: Having read the article in the September issue of the Montana Stockgrower, on behalf of my wife and myself, as Livestock/Crop Producers, I am proud to add our endorsement of this or any other measure which would aid in research for preventing of death in Livestock. We have a particular reason for being interested in this type of measure as we lost a very valuable horse due to a disease that has not been studied, "because it hits only, 1 in 10 thousand."

This letter is one which we would like taken as Testimony in regard to any hearings on 9554 or similar measures. It is our hope that the proposed Resolution be adopted quickly and passed by all committees, sub-committees, and by the majority of the 2 Houses of the Legislature. We feel that such legislation would, in time, prevent the necessity of anyone having to make the decision to donate to one of the 2 Vet. colleges, as we did this year, for disease research as it relates to Livestock.

Thank you for this effort and any support you render in regard to similar legislation!

Cordially,

Mr. and Mrs. WILLIAM ROBERT EDWARDS,
Lazy XE-Connected Ranch.

BOZEMAN, MONT.

Mr. MELCHER. I notice that our second witness indeed does represent the Department of Agriculture so we will welcome Paul A. Vander Myde, Deputy Assistant Secretary, Conservation Research and Education, U.S. Department of Agriculture.

Mr. Vander Myde, we are delighted to have you with us this morning. We will listen with great interest to your explanation of opposition to this bill.

STATEMENT OF PAUL A. VANDER MYDE, DEPUTY ASSISTANT SECRETARY, CONSERVATION, RESEARCH AND EDUCATION, ACCOMPANIED BY DR. BRUCE F. BEACHER, ASSISTANT TO ADMINISTRATOR, COOPERATIVE STATE RESEARCH SERVICE, AND DR. EARL SPLITTER, PRINCIPAL VETERANARIAN, CSRS, U.S. DEPARTMENT OF AGRICULTURE

Mr. VANDER MYDE. Thank you, Mr. Chairman. I am very pleased to be here even if somewhat unexpectedly.

I would also like to have a chance to introduce Dr. Bruce Beacher, who is the Assistant to the Administrator of the Cooperative State Research Service.

Mr. MELCHER. I didn't catch the name?

Mr. VANDER MYDE. Dr. Bruce Beacher.

Mr. MELCHER. Dr. Bruce Beacher?

Mr. VANDER MYDE. And Dr. Beacher is Assistant to the Administrator of CSRS, and also with me is Dr. Earl Splitter, who is Principal Veterinarian for the Cooperative State Research Service.

Mr. Chairman, we appreciate this opportunity to comment on H.R. 3286, a bill to authorize the Secretary of Agriculture to encourage and assist the several States in carrying out a program of animal health research. We have long-standing relationships with the colleges of veterinary medicine and the State agricultural experiment stations in this area. Their research has helped us to maintain a continuing supply of top-quality meat, dairy, and poultry products at prices consumers can afford. We want to strengthen our association with the colleges and State stations on animal health research in the most efficient manner.

We have some brief comments on the animal health problem, our current animal health research efforts, and some particular features of H.R. 3286.

Animal diseases are a very significant cost factor in our food supply system. Annual losses from diseases and parasites in livestock probably exceed \$3.6 billion. The 1972 Terry report of the National Academy of Sciences indicates losses as high as 15 to 20 percent of all animals. Our Animal and Plant Health Inspection Service reported a total of 423,000 animals and animal parts and 404 million pounds of poultry condemned as unfit for human consumption in fiscal year 1972, when 162 million meat animals and 12 billion pounds of live poultry were marketed. Diseases and parasites largely caused these condemnations.

Specific diseases exact a severe toll each year. Bovine mastitis losses are about \$500 million annually, those from bovine respiratory diseases about \$200 million, and those from swine dysentery about \$34 million, to name a few. Many other losses are of unknown cause, including one of the most costly, shipping fever. Approximately 70 percent of livestock abortions also are of unknown cause.

Animal disease research has been in progress for a long time throughout the Nation. As a result, many once-severe diseases, such as hog cholera, have been brought under control and we have been able to maintain profitable production of meat, dairy, and poultry animals. But disease problems continue to plague producers and in 1973 the

Department of Agriculture programed about \$23.4 million for animal health research. About \$1.7 million was allocated to colleges of veterinary medicine, \$2 million to State agricultural experiment stations, and \$19.7 million to Federal laboratories. The States and industry invest additional large sums in animal health research. We do not have complete information, but the funding of research on animal diseases, pests, parasites, and toxins by USDA, the State agricultural experiment stations, and other cooperating institutions alone exceeds \$40 million annually. In terms of cash receipts from livestock—it is a modest investment for value received.

The colleges of veterinary medicine currently receive about \$15 million in total from Federal agencies. Nearly two-thirds of this amount is human health-related research grants of 1 to 5 years duration from the Department of Health, Education, and Welfare.

H.R. 3286, would establish a new program to support animal health research in the veterinary colleges and agricultural experiment stations through formula funding administered by the Department of Agriculture. The funds would be allocated to eligible institutions in the States on recommendation of an advisory board as follows: 58 percent on the basis of the value of livestock and poultry in each State; 38 percent in proportion to animal health research capacity; and, 10 percent on the basis of need for expanded research capacity. The balance of 4 percent would be used for administration, program assistance to the States, and program coordination.

It is our understanding that the intent of the new program is to assure more continuous and stable funding of animal health research in these State institutions, as well as to increase the total research effort. Indirectly, of course, the additional funding would stimulate the training and development of new animal health scientists and technicians. Many graduate students, for example, would obtain valuable experience by assisting on the research projects as a part of their training. This has been demonstrated in our continuing research support programs with the State agricultural experiment stations under the Hatch Act as amended in 1955, and with the State schools of forestry under the McIntire-Stennis Act of 1962. Animal health-related research currently is supported under both of these programs. In addition, the Department of Agriculture awards special research grants under Public Law 89-106 in support of the programs of the Department, including animal health research.

The specific provisions of H.R. 3286, however, would present a number of problems as well as additional administration which we feel can be avoided by continuing to fund the colleges and experiment stations under the current programs—Hatch, McIntire-Stennis, and Public Law 89-106. For example, the formula proposed in H.R. 3286 does not take into account income from livestock. It further restricts possible funding to States lacking research capacity. Provision for matching funds—a very important feature assuring strength and State commitment for continuing support in our other programs—is omitted. The determination of research capacity of institutions as a basis for allocation could be highly subjective. Other technical improvements would be necessary in the language of the bill.

For the reasons stated, and in recognition of the existing support programs relating to animal health, the Department does not favor the enactment of H.R. 3286.

We want to continue our successful association with the colleges and experiment stations and with veterinary science leaders to assure an adequate level of animal health research. We will also continue to review animal health research needs with budget officials and with the Congress, insofar as the Federal commitment is identified and reaffirmed periodically.

If there are any questions, we will be glad to attempt to answer them. Thank you.

Mr. MELCHER. Mr. Secretary, thank you for your statement. It pretty well follows along the letter we got from Acting Secretary Bill Campbell.

I am intrigued about this statement—and I think it is both in the letter from Secretary Campbell and from your testimony—that adequate legislative authority already exists for the Department to carry out essentially the features which would be provided in the bill.

You mentioned Public Law 89-106. Is that the Hatch Act?

Mr. VANDER MYDE. No, sir; that is a separate act which is used primarily for research grants to university scientists and graduate students. It is also used in connection with funding special problems.

Mr. MELCHER. Pardon me?

Mr. VANDER MYDE. Funding special problems that we encounter.

Mr. MELCHER. Does it have a title by any chance?

Mr. VANDER MYDE. The Agriculture Omnibus Act.

Mr. MELCHER. Do you know much about the Agricultural Omnibus Act?

Mr. ALLEN. No.

Mr. MELCHER. Do you?

Mr. EASLEY. No.

Mr. MELCHER. Perhaps you could further identify this act?

Mr. BEACHER. This act was carried out about 5 or 6 years ago, perhaps a few more than that, to cover a number of needs of the Department. It has a number of sections. The section we are talking about is section 2 dealing with grants to further programs of the Department of Agriculture.

We are, for example, funding the 1890 colleges program—the black land-grant colleges—in this way.

Mr. MELCHER. Are you saying that the principal method that the Department has is this Agricultural Omnibus Act, which is kind of a catchall to determine what the Department wants to fund?

Mr. BEACHER. This is one of three methods. The Hatch Act is our major support act with the experiment stations and through the land-grant colleges. The McIntire-Stennis is in support of the forestry schools, and they do have some animal health research. It is very small but they do have some under that act. Public Law 89-106 is for research on problems of special concern to the Department of Agriculture. So, we do have those three ways.

Mr. MELCHER. I think it is quite broad, though, isn't it?

Mr. BEACHER. Yes.

Mr. MELCHER. And are you telling us that this section 2 pertains to animal health problems or not?

Mr. BEACHER. No, it can be shifted to whatever major needs exist and animal health could be one of those, and has been one in the past.

Mr. MELCHER. Are you familiar with the Department's budgetary requests?

Mr. VANDER MYDE. Yes, sir.

Mr. MELCHER. Has the Department requested during this fiscal year, or last fiscal year, or next fiscal year, under section 2 of this Omnibus Act, specific amounts for animal research?

Mr. VANDER MYDE. Approximately \$70,000 was allocated, Mr. Chairman, under the provisions of section 2 in 1973.

Mr. MELCHER. Did you say \$70,000?

Mr. VANDER MYDE. Yes, sir, \$70,000; that is my understanding.

Mr. MELCHER. All right. Then you are saying that we don't need this bill because under Public Law 89-106, section 2, you are asking for \$70,000?

Mr. VANDER MYDE. Public Law 89-106, along with the Hatch Act and the McIntire-Stennis bill all cover the areas of concern spelled out in the proposed legislation.

Mr. MELCHER. Now, wait a minute. Let us stick with section 2.

Mr. VANDER MYDE. Right, but one needs the full picture.

Mr. MELCHER. Because I want to find out for the subcommittee the significance of your testimony. It apparently is significant because it coincides with Mr. Campbell's letter. You are trying to tell the subcommittee that you are going to solve some problems on a national basis with \$70,000?

Mr. VANDER MYDE. Well, Mr. Chairman, I think one thing that we would like to comment on is just the trend in the agricultural research area within the USDA, as far as our feelings toward it and the increase that we would like to see. I think hopefully we will be seeing that within the coming year. And to the degree that funds are available, the efforts to support agricultural research are going to be stronger than they have been in the past. We certainly hope that we can accelerate our effort in the future.

Mr. MELCHER. Does section 2 give you a formula of distributing the \$70,000?

Mr. VANDER MYDE. No, I do not believe it does.

Mr. MELCHER. Well, then, you are not covered under section 2 of this Public Law 89-106 as to a formula to distribute funds to various institutions that are envisaged under the proposed bill?

Mr. VANDER MYDE. No, sir.

Mr. MELCHER. How about the Hatch Act, you mentioned that. Would that give you a formula for distribution?

Mr. VANDER MYDE. Yes, there is a formula under the Hatch Act.

Mr. MELCHER. And does it cover every one of the institutions that we are speaking of under the bill?

Mr. VANDER MYDE. All except some institutions, I understand, Mr. Chairman.

Mr. MELCHER. Do you have any objections to covering those institutions that won't be covered under the Hatch Act, which are covered under here?

Mr. VANDER MYDE. Excuse me?

Mr. MELCHER. Do you have any objections, does the Department have any objections to distributing funds to those institutions that are not covered under the Hatch Act but are covered under here?

Mr. VANDER MYDE. I don't see any objections that we would have.

Mr. MELCHER. Do you think it would be beneficial?

Mr. VANDER MYDE. Yes; I think it could be.

Mr. MELCHER. Well, why then don't you say revise this bill to your tastes and to benefit the Department instead of sending this letter?

Mr. VANDER MYDE. Well, I think we would have some suggestions and we will be pleased to furnish them for the record.

SUGGESTED AMENDMENTS TO H.R. 3286, ANIMAL HEALTH RESEARCH ACT

Page 3, lines 12 through 14, strike out all words after "support" and insert "from the agricultural experiment station to the college of veterinary medicine in that institution."

Page 3, line 19, strike out "and Puerto Rico," add a comma after "States" and add "Guam, Puerto Rico, and the Virgin Islands."

Page 5, lines 8 and 9, strike out "eligible institutions" and insert "the States," and lines 10 and 11, strike out "where such institution is located."

Page 5, lines 9, 11, 14, and 15, add "and income" after "value."

Page 5, lines 19 through 23, strike out all of subsection (3) and insert a new subsection as follows:

"(3) Forty-eight per centum shall be distributed among the States in proportion to the animal health research capacity of the eligible institution or institutions in each State."

Page 5, line 24, and Page 6, lines 1, 2, and 3, strike out all of subsection (4) and insert a new subsection as follows:

"(c) When the amount available under this section for allotment to any State on the basis of livestock values and income exceeds the amount for which the State is eligible on the basis of animal health research capacity, the excess may be used for remodeling of old facilities, construction of new facilities, or to increase staffing proportionate to the need for added research capacity."

Page 6, line 4, strike out "(5)" and insert "(d)."

Page 6, line 9, strike out "(6)" and insert "(e)."

Page 6 lines 10, 14, 17 and 18, add "and income" after "value" or "values."

Page 6, line 10, strike out "(4)" and insert "(2)."

Page 6, line 11, strike out "(5)" and insert "(3)."

Page 6, line 22, strike out all words and insert new wording as follows: "distribution of domestic livestock and poultry value and income and animal".

Page 8, lines 3 through 10, strike out all of Sec. 7 and insert a new section as follows:

"SEC. 7. Sums available for allotment under the terms of this Act shall be paid to each eligible institution at such times and in such amounts as shall be determined by the Secretary. Funds shall remain available for payment of unliquidated obligations for one additional fiscal year following the year of appropriation, except that funds appropriated under section 6 shall remain available for payment, at the option of an eligible institution, for a period of not more than two fiscal years following the fiscal year of appropriation plus the one additional year for payment of unliquidated obligations."

Page 9, line 23, insert "in addition to providing consultation and advice to the Secretary as provided elsewhere in this Act" following "Board."

Page 9, line 26, add, "The Advisory Board shall continue for the duration of this Act."

Add a new section as follows:

"SEC. 11. The amount paid by the Federal Government to any eligible institution for assistance under this Act, exclusive of the funds paid for research on specific national or regional animal health problems authorized by section 5, shall not exceed during any fiscal year the amount available to and budgeted for expenditure by such institution during the same fiscal year for animal health research from non-Federal sources. The Secretary is authorized to make such expenditures on the certificate of the appropriate official of the institution having charge of the animal health research for which the expenditures as herein provided are to be made. If any or all of the institutions certified for receipt of funds under this Act fails to make available and budget for expenditure for animal health research in any fiscal year sums at least as much as the amount for which it would be eligible for such year under this Act, the difference between the Federal funds available and the funds made available and budgeted for expenditure by the institution shall be reapportioned by the Secretary to other eligible institutions

of the same State if there be any which qualify therefor and, if there be none, the Secretary shall reapportion such differences to the qualifying institutions of other States participating in the animal health research program."

Mr. MELCHER. That is my problem with Secretary Campbell's letter, and frankly with your testimony. You mention how much we are losing in livestock losses and you recognize the overall problem and then you say you have plenty of authority but you decry this bill. But apparently there are some blind spots, as I gather, from your testimony here right now. And, if so, why not tell us what kind of a bill you would like. We, the subcommittee, I am sure, would be interested in that, and I know the full committee would be also.

Mr. VANDER MYDE. We would be pleased, Mr. Chairman, to submit to the committee a list of amendments which we think might be helpful.

Mr. MELCHER. I think it would be extremely helpful to me because I have found out that often when you get an adverse report, it is very difficult to pass a bill around here without some suggestions.

So I would like to have that.

Mr. VANDER MYDE. We will be glad to do that.

Mr. MELCHER. The gentleman from Louisiana?

Mr. RARICK. No questions.

Mr. MELCHER. The gentleman from Minnesota?

Mr. ZWACH. Thank you, Mr. Chairman.

I have been listening intently to these discussions.

You are not objecting in any way, as I could gather, to additional money for animal research at the Federal level? Is that basically true?

Mr. VANDER MYDE. That is correct, Congressman. I think we would not be opposed to increasing the efforts on the part of animal health. I think our preference though is to go about it using a different approach. We do not favor the approach outlined in the bill.

Mr. ZWACH. You are already now able to distribute the research money to all schools of animal science and so on, and do now give matching funds to these schools, do you not?

Mr. VANDER MYDE. Yes, sir; we do. There are some exceptions to this, as I understand.

Mr. ZWACH. I see. You certainly give funds to the University of Minnesota School of Veterinary Medicine, do you not?

Mr. SPLITTER. If I may say, there are two veterinary schools that are not included because of the legal aspects of the Hatch Act and these are Tuskegee Institute and the University of Pennsylvania because they are private institutions.

Mr. ZWACH. I see. So, you cooperate in the land-grant schools?

Mr. SPLITTER. Land grant institutions, yes.

Mr. ZWACH. I see. And would this bill provide to you rights that you do not now have?

Mr. VANDER MYDE. Well, I think it would establish another grant system. We would prefer to use annually provided funds and present existing programs instead of having a different grant system set up.

Mr. ZWACH. I see. You mean the formula they provide might not be in all cases the best use of money?

Mr. VANDER MYDE. Well, we do have some problems with the formula, Congressman. As I pointed out in my testimony, that is, with respect

to it not taking into account the income from livestock, research capacity and matching funds.

Mr. ZWACH. As you know, I am a livestock man. Bill Scherle of Iowa is a livestock man and Mark Andrews is a livestock man and they sit on the Subcommittee on Agriculture Appropriations that provides the funding. This money is going to have to come basically through them.

Now, you submit your requests to OMB; is that correct?

Mr. VANDER MYDE. That is correct, sir.

Mr. ZWACH. And then they make their recommendation?

Mr. VANDER MYDE. Yes, that is true.

Mr. ZWACH. Do they listen to you when they make their allotments? This has been a real touchy situation with me. I personally have felt since I have been here that OMB has taken on to itself too much power. To what extent do you wind up from OMB with what you request?

And I know, Paul, that you haven't been here so long but these other gentlemen certainly could speak to that.

Mr. VANDER MYDE. I don't know if anyone, Congressman has done such a study to find out what our batting average has been with OMB, to, as I pointed out before, the added emphasis that we would like although I can assure you that they are listening to us with respect to have placed on the agricultural research area. But, if such information is available, I would be happy to provide it to you.

Mr. ZWACH. Is there anyone on their staff that is at all familiar with livestock production, livestock diseases and losses, and the importance of this area? It is my feeling that there is no one down there who knows anything.

Mr. VANDER MYDE. Yes, sir.

Mr. ZWACH. And what have you found?

Mr. VANDER MYDE. I think that they are sympathetic and understanding and concerned and feel this is a very important area. Knowing a good number of the budget examiners and the chief of the agricultural branch who we deal with on a regular basis, I feel that they are well informed and concerned.

Mr. ZWACH. I would like to have from you for the record and for my information and for the committee's information, the increased Federal appropriations for animal research since, say, 1960 to the proposed 1974, such as the amount spent for Federal research and the amount that has been going to the States. I would like to see that.

Has that been each year a little bit of a step up or has there been some recession in Federal participation?

I would like to see that. Are these figures available?

Mr. VANDER MYDE. Yes, it is.

Mr. ZWACH. Do you know if we now have been continually stepping up funding a little as the inflation has hit and as the importance of these areas has been revealed?

Mr. VANDER MYDE. Yes, sir, it is my understanding that it has been increased.

Mr. ZWACH. I would like those figures for the record.

Mr. VANDER MYDE. We have increased the amount over the years. These increases might be somewhat modest but it has increased.

Mr. ZWACH. Could you supply this?

Mr. VANDER MYDE. Yes, sir.

Mr. ZWACH. I want a picture exactly showing what we at the Federal level are doing about this ourselves and to what extent we are doing anything about this with regard to cooperation with the States.

Mr. VANDER MYDE. We will be happy to provide that information.

Mr. ZWACH. Also the amounts going to the colleges.

Mr. VANDER MYDE. Yes.

Mr. MELCHER. Without objection, the information will be made a part of the record at this point.

[The information follows:]

ANIMAL HEALTH RELATED RESEARCH EXPENDITURES—STATE AGRICULTURAL EXPERIMENT STATIONS, U.S.
DEPARTMENT OF AGRICULTURE¹

[Dollar amounts in thousands]

Fiscal year	State agricultural experiment stations			U.S. Department of Agriculture	
	USDA extramural support ²	Total funds	Scientist years ³	In-house programs	Scientist man-years
1960	\$1,599	\$6,979		\$7,083	
1961	1,656	7,161		8,218	
1962	1,962	7,453		10,197	
1963	1,816	8,159		11,064	
1964	2,464	8,736		11,392	
1965	2,733	11,131		13,384	
1966	3,237	13,493	361	15,483	213
1967	2,946	13,619	325	16,411	204
1968	3,283	14,811	289	16,219	196
1969	3,431	14,628	289	15,997	210
1970	3,918	14,271	322	16,870	194
1971	3,475	14,883	270	18,846	188
1972	3,981	14,866	268	20,184	189

¹ Expenditures for fiscal years 1973 and 1974 are not available at this time.

² USDA appropriated funds provided for State research through cooperative agreements, contracts, formula grants under the Hatch Act as amended in 1955, formula grants under the McIntire-Stennis Forestry Research Act, "Research facilities grants" under Public Law 88-74 and "Special grants" under Public Law 89-106.

³ Information is not available prior to 1966.

Mr. SEBELIUS. Could I be recognized for just a comment?

Mr. MELCHER. Certainly.

Mr. SEBELIUS. I know that you were surprised to see the Department witness scheduled here, but I see that we have six college deans here from veterinary schools and the past president of the American Veterinary Medical Association, and we are soon going to use up the first hour. These gentlemen have come a long ways so can't we ask these gentlemen here to come back for the questions?

Mr. MELCHER. I think the gentleman's suggestion is excellent. If there is no objection from other members of the subcommittee, and if it is possible, Mr. Secretary and Dr. Beacher, and Dr. Splitter, would you mind cooperating with us?

Mr. VANDER MYDE. We will certainly make every effort to do so.

Mr. SEBELIUS. I don't object to them staying and listening to the testimony that is coming up, though.

Mr. MELCHER. I believe they should, sir.

Mr. VANDER MYDE. We will be very interested in that, sir, I assure you. We want to continue to work closely with all of those individuals representing the schools of veterinary science and also those from the agricultural experiment stations.

Mr. MELCHER. Thank you very much.

Our next witness is Dr. M. R. Clarkson, past president, American Veterinary Medical Association, Peterborough, N.H.

Dr. Clarkson, as a long-time admirer of you and your profession, I certainly am pleased to welcome you to the subcommittee today.

STATEMENT OF DR. M. R. CLARKSON, DEAN, AMERICAN VETERINARY MEDICAL ASSOCIATION, PETERBOROUGH, N.H.

Dr. CLARKSON. Thank you very much, Mr. Chairman.

Mr. Chairman and members of the committee, we appreciate this opportunity to be heard on the merits of H.R. 3286, a bill "To authorize the Secretary of Agriculture to encourage and assist the several States in carrying out a program of animal health research."

My colleagues and I represent the American Veterinary Medical Association (AVMA), the Association of American Veterinary Medical Colleges (AAVMC), and the Experiment Station Committee on Organization and Policy (ESCOP). Dr. Leo K. Bustad is dean of the College of Veterinary Medicine at Washington State University; Dr. E. D. Besch is dean of the School of Veterinary Medicine at Louisiana State University; Dr. D. M. Trotter is dean of the College of Veterinary Medicine at Kansas State University; Dr. Richard B. Talbot is dean of the College of Veterinary Medicine at the University of Georgia; Dr. Phillip T. Pearson is dean of the College of Veterinary Medicine at Iowa State University; Dr. Sidney A. Ewing is dean of the College of Veterinary Medicine at the University of Minnesota; and Dr. Marvin Twiehaus is head of the Department of Veterinary Science at the University of Nebraska. Dr. Henry Fortmann, regional coordinator for the 14 State agricultural experiment stations in the 12 northwestern States is presently in Denver attending the annual meeting of the National Association of State Universities and Land-Grant Colleges. At the conclusion of my statement I will summarize a few points from the statement he submitted. I am past president of the American Veterinary Medical Association.

Mr. Chairman, I am privileged to have with me a number of my colleagues representing the colleges of veterinary medicine and the divisions of Veterinary Medical Science and the Universities. Their names are before you.

I want to specifically mention, however, Dr. Henry Fortman, the regional coordinator for the State Agricultural Experiment Stations in the 12 northeastern States. Dr. Fortman was authorized to represent all 55 of the agricultural experiment stations here today, but he had to be away at a meeting of the Land Grant College Association so he asked me to give you, at the end of my statement, a brief summary of his statement.

So, I am very much pleased to act on his behalf.

The passage of H.R. 3286 would indeed provide very much needed legislation. Assistance to the States provided by the bill would go a very long way to help protect the health of Nation's livestock poultry and other animal resources. As consumers all of us, we are all interested in the meat, milk, and eggs for our expanding consumer market, which must come from healthy animals and birds.

As has already been commented by one of the members of the committee, as the demands for food of animal origin increased, the production process becomes more crowded. With the greater concentrations of animals and birds, the health problems multiply. So better methods are needed to prevent animal diseases on the farm at the ranch, in the broiler production house, at the feed lots, and during shipments from place to place. And I would point out that the technology for preventing diseases in our mass-production animal industry is largely unavailable. And this bill will help provide the means to develop such technology.

Unfortunately, there is no reliable evaluation of the total health damage to animals by disease. In 1965 the Department of Agriculture issued a statement, "Losses in Agriculture—Agriculture Handbook No. 291" based on average values for the period 1951–60, wherein it was estimated that losses from certain diseases (including parasites) of livestock and poultry exceeded \$2.700 billion annually. Now that loss related to a 1960 value of \$36,938 billion reported for livestock and poultry on farms and the year's marketing of livestock and poultry and their products.

By comparison, those same values for 1971 were reported as \$58,869 billion, a 50-percent increase. This would suggest a 1971 dollar value of losses from disease of over \$4 billion. We know that the evidences of proportionate losses from disease have not diminished.

These losses must ultimately be absorbed by the consumer who purchases the products of animal agriculture, just as surely as he or she also must absorb the more direct losses from diseases and parasites of horses, dogs, cats, and other companion animals.

Congressman Leggett already commented on reports from the Department and from the National Academy of Sciences, and I just want to emphasize the report from the Department which said in 1966 entitled: "A National Program of Research for Agriculture." And it said: "Infectious diseases represent the single greatest hazard to the production of an adequate and wholesome supply of animal proteins."

And I would submit, Mr. Chairman, and I feel confident the figures from the Department which have been requested will bear me out, that although the dollar amounts that have gone into this have increased slightly over this time, the actual research effort has decreased because of the debilitating effects of inflation.

Now, what are some of these conditions that no adversely effect the health of our animals? A very short list, but a representative one, might include the following:

Respiratory disease and shipping fever complex of cattle. Infectious anemia and respiratory disease complex of horses. Mastitis of dairy cows.

Contagious diseases of reproductive organs of cattle, swine, and sheep. Several of these have already been mentioned.

Chronic respiratory diseases of sheep and goats. *Dirofilariasis* and *rhinotracheitis* of dogs. *Salmonellosis* of cattle and swine. *Synovitis*, *arthritis*, *fowl cholera*, and *colibacillosis* of turkeys. *Lymphatic leukemia* and *unrolithissis* of cats. *Swine dysentery* and other intestinal diseases of young pigs. *Lymphoid leukemia*, *infectious bronchitis*, and *Newcastle disease* of poultry.

Numerous debilitating parasitic infections of all species.

And there are many, many more.

H.R. 3286 would provide a well tested approach to the solution of these problems by a long-range supporting and strengthening of the animal health research capability in each State. No one can do the research job necessary if he has to continually worry about future funding. Many animal health problems differ from State to State. It is of little comfort to those concerned in one State to know that good research is being conducted in a distant State, especially if the distant institution is not concerned with the current problems of the first State.

For these reasons the proposed legislation is modeled after the Hatch and McIntire-Stennis Acts which have done so much for research in general agriculture and forestry. A special advisory board would assist the Secretary in determining regional national priorities and the research capacities of the institution to receive funds.

The basic funds for ongoing research and construction would be fairly distributed by formula according to the livestock and poultry values and income in each State and the research capacities of the receiving institutions, which would be the colleges of veterinary medicine and, where there are not such colleges, the agricultural experiment stations conducting animal health research. Funds would also be provided on a nonformula basis to meet pressing national and regional needs.

Now, the Department of Agriculture has expressed concern about the clarity of wording in some parts of the bill dealing with the allocation of funds. We would be glad to work with the Department and the committee to perfect the language as may be necessary to accomplish the stated purpose of the bill.

I am very happy that the committee has requested this information from the Department.

For example, we agree with the Department's suggestion that both the value and income of livestock and poultry should be used in determining the amounts to be distributed under the formula. The Department also suggests that some of the determinations must depend upon a measure of subjective judgment. Such judgments would be made by the Department itself. It is because this is necessary that the bill wisely provides for an advisory board to aid the Secretary in making these decisions. We have confidence in the abilities of the Department to handle these matters equitably. It would not be practicable to write all of the details into the legislation.

The Department suggests also that the funds, with certain exceptions, be restricted to amounts not to exceed funds available to an institution for animal health research from non-Federal sources. This restriction would impose unnecessary burdens of accounting, auditing, and inspecting of State and other non-Federal funds by Federal employees. At some institutions, with limited resources, it would seriously hamper the development of productive programs of research. We ask that this restriction not be included in the legislation.

The overriding purpose of the bill is to promote the general welfare through expanded programs of research to improve the health of animals.

There is no present authorization of which we are aware that specifically provides for the much needed animal health research en-

visaged by this legislation. A fresh approach is badly needed for the solution of the many serious problems of animal health.

With the passage of H.R. 3286, the Association of American Veterinary Medical Colleges (AAVMC) will work in cooperation with the Experiment Station Committee on Organization and Policy (ESCOP) to formulate programs consistent with the provisions of the bill, for consideration by the Department (including the Animal Health Research Advisory Board) and the Congress. In this they will have the active support of the Council on Research of the American Veterinary Medical Association.

We look forward to increased opportunities to help preserve and improve the health of our Nation's animal resources.

Mr. Chairman, several of our group have supporting statements and a number of individuals who could not be present today have submitted statements for the record.

We appreciate this opportunity to present our views, and will be glad to respond to questions.

We urge the passage of H.R. 3286.

Now, Mr. Chairman, with your indulgence I have a large number of more specific justifications for research in sheep and goat medicine, research on swine diseases, research on some of the public health hazards of uncontrolled diseases, and I would like to submit that with my statement for the committee's perusal and for the record, if you will.

Mr. MELCHER. Without objection, the several statements will be included either for the record or the files, as determined by the committee.

[The statements above-referred to can be found in the files of the committee].

Dr. CLARKSON. Mr. Chairman, as I mentioned earlier I had a statement presented by Dr. Henry Fortmann, on behalf of all of the agricultural experiment stations and I hope you will accept that for the record. It is rather a detailed one but there are two or three points that he wished that I would point out to you directly.

Mr. MELCHER. Before you summarize his statement, without objection, Dr. Fortmann's entire statement will be included for the record. Hearing no objection, so ordered.

[The statement of Henry Fortmann in full follows:]

STATEMENT OF HENRY FORTMANN, REPRESENTING STATE AGRICULTURAL
EXPERIMENT STATIONS

Mr. Chairman and members of the Committee, may I express my appreciation for the opportunity of appearing before the Committee to testify about H.R. 3286. The Animal Health Research Act, and other related bills.

I am Henry Fortmann, Regional Coordinator for the 14 State Agricultural Experiment Stations in the 12 Northeastern States. I am appearing before the Committee on behalf of the Experiment Station Committee on Organization and Policy (ESCOP) which represents the 55 State Agricultural Experiment Stations (SAES) in the 50 States, Puerto Rico, The Virgin Islands, and Guam, and the Colleges of 1890.

I want to assure the Committee that the State Agricultural Experiment Stations have had a splendid opportunity to study the provisions in H.R. 3286 and its predecessor and companion bills.

Comments and suggestions to make the provisions of the bill more responsive to animal health research needs in individual states have been solicited from the individual stations by a subcommittee of ESCOP consisting of:

Dr. N. C. Brady, Cornell University, representing the Northeast; Dr. Doyle Chambers, Louisiana State University, representing the South; Dr. M. T. Buchanan, Western Director-at-Large, representing the West; Dr. G. M. Browning, North Central Regional Director, representing the North Central region; and Dr. H. R. Fortmann, Northeast Regional Coordinator, Chairman.

My testimony is a synthesis of the suggestions received from the Directors of the 55 State Agricultural Experiment Stations.

During the many months this proposed legislation has been under consideration we have had the closest cooperation with the representatives of The Colleges of Veterinary Medicine, The American Veterinary Medicine Association (AVMA) and the Cooperative State Research Service, USDA. We trust this widespread review by the State Agricultural Experiment Stations, representing, as they do, the total spectrum of the American people, and the close cooperation between SAES, AVMA and the Colleges of Veterinary Medicine have helped produce a singularly useful and important piece of enabling legislation.

I am sure that your Committee as well as the sponsors of H.R. 3286 are well informed about the value of the livestock industry in this country. Such data are available from the census, but cash receipts for livestock and livestock products in 1972 totaled \$35.5 billion.

Estimates of losses due to diseases and parasites are always a matter of interpretation. A figure of \$3.6 billion is a reasonable estimate. If all or some portion of this loss could be avoided, it would be a substantial contribution to the supply of food from animal sources and would reduce the cost due to these losses.

Suffice to say that the magnitude of the animal industry in this country is such and the recurrent losses due to diseases and parasites is so large that ESCOP on behalf of the State Agricultural Experiment Stations has unanimously endorsed support of the proposed Animal Health Research Act (H.R. 3286).

The need to constantly seek better ways to minimize the ravages of diseases and parasites and to find the solution to problems which now have us baffled is both an obligation and an opportunity. Less obvious, but even more important is the need to provide the bulwark of defense against new variants of diseases now with us or introduced diseases which may elude our inspection and quarantine barriers. As a plant breeder and geneticist, I am particularly sensitive to the vulnerability of all our major crop and livestock species.

H.R. 3286 will provide the means whereby advantage may be taken of the potential of the State Agricultural Experiment Stations to 1) contribute to the solution of problems confronting us now; 2) assist in the training of a cadre of scientists trained in the various fields of science needed to work on problems related to animal health; and 3) provide the knowledge which will enable this nation to respond quickly and effectively to the threat of disease to our animal industries and the food supply of the American people.

There are a few points pertaining to H.R. 3286 about which we wish to express our views so that they may be a matter of the record of this hearing.

1. We think it is in the interest of the American people that the Animal Health Research Act not be burdened with the requirement for matching funds from non-federal sources. To insert a matching requirement is contrary to the principle of revenue sharing, will do nothing to get research accomplished and in fact serves only to impose added administrative burdens.

2. *Determination of Research Capacity.* We strongly urge that the "Advisory Board" in making recommendations on the procedures to determine Research Capacity incorporate the general concept of a Scientist-Man-Year (SMY) in the definition.

A simple enumeration of Staff members is not an adequate measure of Research Capacity. The following definition of an SMY as used by the SAES and USDA is offered here as a suggested guideline that could be applied in measurement of "Research Capacity". This definition is derived from the Current Research Information System (CRIS).

At the State Agricultural Experiment Stations a "Scientist" is a research worker with a rating of assistant professor or equivalent rank or higher, conducting organized research, who is responsible for independent scientific study, thought originality, judgments and accomplishments directly assignable to the unit of work reported. This item should include the efforts of leaders of investigations, project leaders and portions of the time of supervising working scientists or staff assistants whose work meets the preceding definition. Administrative staff are excluded, unless they are active participants in the research actions of a project and meet the above requirements. Centralized statistical or other ana-

lytical staff should not be listed as scientists in an SMY tabulation. The tabulation following shows more precisely the types of personnel included in reporting scientist-man-years at the State Agricultural Experiment Stations.

Type of personnel	Include in scientist man-years reporting	Exclude in scientist man-years reporting
Experiment station director, experiment station associate director, experiment station assistant director, research institute director, [and department head or chairman.	Time spent on direct conduct of research in conformance with the definition above only.	Time spent on administrative duties.
Professor or scientist, associate professor or associate scientist, and assistant professor or assistant scientist.	Time spent on direct conduct of research in conformance with the definition above only.	Time spent on teaching or extension activities.
Research associate and postdoctoral specialist, (e.g., California).	Time spent on direct conduct of research in conformance with the definition above only.	Time spent on professional support.
Instructor, graduate student, research assistant, library staff, editorial and publishing staff, and statistical consultant and services.	Do not include as scientist man-years.	Generally qualifies as professional support.

In the USDA, a "Scientist" is defined as a research worker with a rating of GS-11 or higher. Procedures comparable to those outlined above for SAES are used by USDA to arrive at SMY data.

3. Since it is extremely important that the research effort of the Colleges of Veterinary Medicine be coordinated with that of the State Agricultural Experiment Stations, it is urged that the research be classified and reported in accordance with the Classification System now utilized by the SAES and USDA research agencies. We believe it is most important that this classification system become an integral part of the planning and administration of research under the Act. The complete classification system is contained in a document identified as the "Manual of Classification of Agricultural and Forestry Research." "Classification used in Current Research Information System" "by Activity, by Commodity, Resource or Technology, by Field of Science, and by Research Problem Area (RPA)."

A copy of the Manual of Classification is being provided to the Committee for the convenience of the Committee, the following RPA's are the ones most likely to be included in research on Animal Health (It is conceivable there might be others) : See page in Manual for full description.

RPA and Title		Page number in manual of classification
210	Control of Insects & External Parasites Affecting Livestock, Poultry & other Animals.....	76
211	Control of Diseases of Livestock, Poultry & other Animals.....	77
212	Control of Internal Parasites of Livestock, Poultry, & other Animals.....	78
213	Protect Livestock, Poultry & other Animals from Toxic Chemicals, Poisonous Plants, & other Hazards.....	79
214	Protection of Plants, Animals, & Man from Harmful Effects of Pollution.....	81
310	Reproductive Performance of Livestock, Poultry & other Animals.....	94
311	Improvement of Biological Efficiency in Production of Livestock, Poultry & other Animals.....	95
312	Environmental Stress in Production of Livestock, Poultry & other Animals.....	96
313	Production Management Systems for Livestock, Poultry & other Animals.....	97
317	Mechanization & Structures Used in Production of Livestock, Poultry & other Animals.....	101
318	Non-Commodity-Oriented Biological Technology & Biometry.....	102
702	Protect Food & Feed Supplies from Harmful Microorganisms & Naturally Occurring Toxins.....	137
707	Prevent Transmission of Animal Diseases & Parasites to Man.....	142
901	Alleviation of Soil, Water & Air Pollution & Disposal of Wastes.....	157

Further classification details are available in the three dimensional classification system including:

Classification by (A) *ACTIVITY* (Page 8, Classification Manual)

Protection of man, commodities, resources and their products from losses, damage or discomfort

Code and Title

- 4500 Protection against insects, mites, snails & slugs & their control agents.
- 4600 Protection against diseases, parasites & nematodes & their control agents.
- 4700 Protection against weeds & their control agents.
- 4810 Protection against fire.
- 4820 Protection against flood.
- 4830 Protection against pollutants.
- 4840 Protection against climatic extremes (frost, hail, wind, drought, etc.).
- 4850 Protection against birds.
- 4860 Protection against rodents & other mammals.
- 4870 Protection against molds, fungi & other spoilage organisms.
- 4880 Protection against allergens, toxins & poisonous plants.
- 4890 Protection against radiation, noise & other hazards.

Classification by (B) *Commodity, Resource or Technology not Associated with Specific Commodities*. (See Manual, Pages 22-29 for Sub-Classifications).

Prime¹—Classification

- 0800 Fish, shellfish, game¹, fur-bearing animals & other wildlife & their habitats.
- 2900 Poultry.
- 3000 Beef Cattle.
- 3100 Dairy Cattle.
- 3200 Swine.
- 3300 Sheep and wool.
- 3400 Other animals (see 0850 for fur-bearing animals).

Classification by (C) *Field of Science*.

Biological and Title

- 0110 Biochemistry & biophysics—animal.
- 0114 Biochemistry & biophysics—other.
- 0210 Biology—Environmental, systematic, applied—animal.
- 0214 Biology—Environmental, systematic, applied—other.
- 0310 Biology—Molecular—animal.
- 0310 Biology—Molecular—other.
- 0410 Entomology—animal.
- 0414 Entomology—other.
- 0510 Animal Genetics & Breeding.
- 0513 Genetics—other.
- 0610 Immunology—animal.
- 0710 Microbiology—animal.
- 0790 Microbiology—other.
- 0810 Nematology—animal.
- 0910 Nutrition & Metabolism—animal.
- 0914 Nutrition & Metabolism—other.
- 1010 Parasitology—animal.
- 1013 Parasitology—other.
- 1110 Pathology—animal.
- 1114 Pathology—other.
- 1210 Pharmacology.
- 1310 Physiology—animal.
- 1313 Physiology—other.
- 1410 Virology—animal.
- 1414 Virology—other.

Physical

- 1524 Chemistry—analytical.
- 1525 Chemistry—inorganic.
- 1526 Chemistry—organic.
- 1527 Chemistry—physical.
- 1529 Chemistry—other.
- 2220 Mathematics.
- 2230 Statistics & biochemistry.

¹ Primary Classification (See Manual for Sub-Classifications).

Social and Behavioral

3130 Psychology.

A great deal of research planning and coordination centers around a broad system of research classification—by Research Programs. Most of the research relating to Animal Health would be included under one of these groups:

RP and Title

- 1.04 Environmental Quality.
- 1.06 Fish & Wildlife.
- 4.01 Beef.
- 4.02 Dairy.
- 4.03 Poultry.
- 4.04 Sheep.
- 4.05 Swine.
- 4.06 Other animals.
- 7.01 General Resource and Technology.

It is presumed that the "Advisory Board" mentioned in H.R. 3286 would determine what research would be eligible for use of funds appropriated under the Act. However, I would like to see the record of these hearings indicate that use of the existing classification system is recommended.

In order to further expedite research coordination and planning it is recommended that all research projects funded under this Act be reported in the Current Research Information System (CRIS) : that the CRIS system be utilized for purposes of reporting projects funded under the Act and for purposes of inventorying the nature, location, and magnitude of research on Animal Health. Appropriate financial additions should be made in the CRIS budget as a part of appropriations made for Animal Health Research, assuming the proposed Act becomes law, to accommodate the work involved.

4. We wish to have it made a matter of record, that The Ohio Agricultural Research and Development Center located at Wooster, Ohio 44691 and The Agricultural Experiment Station of the Pennsylvania State University located at University Park, Pennsylvania 16802 are specifically included in the list of State Agricultural Experiment Stations eligible to receive proportionate allocations of funds appropriated under the Act, if it becomes law.

5. Finally we hope that in those instances where a state has a College of Veterinary Medicine which is designated as *the* recipient of funds appropriated under the Act that the record of these hearings will make it clear that it is not the intent of this Act to prohibit the use of funds on approved research projects for research conducted by staff members of the State Agricultural Experiment Stations in those states. It is hoped that full advantage will be taken of the expertise available in the State Agricultural Experiment Station by providing funds from Animal Research Act appropriations to carry on research projects on urgent problems, the solution of which will contribute in a significant way to improvement of production agriculture and animal health.

Mr. Chairman, I feel privileged to appear along with this distinguished delegation and I am truly grateful for the opportunity of testifying on behalf of the 55 State Agricultural Experiment Stations in favor of passage of H.R. 3286. My colleagues at the State Stations have provided a wealth of documentation supporting the need for passage of this Act and outlining its potential value. I can make this available if this is desired and in any event I will be pleased to answer any questions or provide additional information.

Thank you Mr. Chairman and members of the Committee.

Mr. MELCHER. Now, if you would care to summarize it?

Dr. CLARKSON. Thank you.

Dr. Fortmann, I should say, has been most helpful to all of us in working in this area. He has had broad experience in working in the State agricultural experiment stations under the general authorizations of the Hatch Act and McIntyre-Stennis Acts. He believes that this bill is very much needed. And the statement represents a consensus of the 55 State agricultural experiment stations in recognition of the need for the proposed legislation and an enforcement of the bill as it has been presented.

His statement reflects the sentiment that no useful purpose will be served by adding a matching requirement to the bill. He directs attention to the necessity to utilize the concept of a scientist man-year as currently defined in the USDA experiment station research programs in calculating research capacity.

And in order to reassure ourselves that rumors pertaining to the list of State agricultural experiment stations, that that list has not been changed from the list which was given on page 5768 of the Congressional Record for March 27, 1973, he wished to explicitly state that it is our understanding that both the Ohio Agricultural Research and Development Center located at Wooster, Ohio, and the Agricultural Experiment Station of the Pennsylvania State University located at University Park, Pa., are specifically included in the list of State agricultural experiment stations eligible to receive proportionate allocations of funds appropriated under the act, if it becomes law.

We also wish to add attention to the appeal that the existing research classification system now used by the experiment stations and USDA in research planning coordination and reporting, be used for the same purpose with all research funded under this animal research legislation and to send in a copy of Animal Manual Classification of Agriculture and Forestry Research, which is being prepared for the committee's files, and this is that voluminous document.

Mr. FOLEY. We certainly appreciate your testimony and we thank you very much for your appearing here this morning.

In order to expedite the committee's opportunity to hear the additional distinguished witnesses, the Chair is going to suggest, we proceed to hear the testimony of the additional witnesses and then return with the questioning of the subcommittee members after we have heard all the witnesses. Any objection?

Mr. THONE. Mr. Foley, I have been very patient this morning. Could I ask him just one question?

Mr. FOLEY. Certainly.

Mr. THONE. Do you agree that matching fund is unnecessary?

Dr. CLARKSON. Yes, sir.

Mr. THONE. It does not serve a good purpose?

Dr. CLARKSON. I think it does serve some purpose and sometimes acts as a stimulant to State governments.

Mr. THONE. Yes.

Dr. CLARKSON. On the other hand, it brings to bear a good deal of extra administration on the part of the Department. They have to then inspect and to audit State and foundation and other non-Federal funds which may be available in order to determine whether indeed they are eligible for matching. There is a point that I would like to make for the committee's consideration.

We hope that you will not add the matching requirement. If you do, we hope that you will follow the precedent of the Hatch Act wherein a minimum is available to each institution without matching. Some of the States would find this very difficult to get started.

The amount in the Hatch Act is \$90,000 per institution. I would suggest not less than \$100,000 in today's world, as a nonmatching base amount.

Mr. THONE. Thank you.

Mr. FOLEY. Thank you again, Dr. Clarkson. If you could remain? I don't know if your schedule allows you to remain?

Dr. CLARKSON. Yes, sir.

Mr. FOLEY. The Chair now recognizes our distinguished colleague from Kansas, Bill Roy, for the purpose of introducing the next witness.

**STATEMENT OF HON. WILLIAM R. ROY, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF KANSAS**

Mr. ROY. Thank you, distinguished members of the committee.

My purpose for being here this morning is to introduce a distinguished and very highly respected Kansas doctor, Dr. Donald M. Trotter, dean of Kansas State University's College of Veterinary Medicine.

First, I would like to ask your indulgence for one or two comments. I want to congratulate the committee on considering the Animal Health Research Act; I believe very strongly that this act—perhaps not in its present form, but certainly after consideration by the committee—should be made the law of the land.

We in Kansas realize—and I think the people throughout the country realize—that animal health is closely associated with human health. I think we also fully realize that in order to be able to feed the people of our Nation and the people of the world we are going to have to have—as nearly as possible—a disease-free livestock and poultry industry. So I congratulate you for considering the bill.

I would also say that I realize we have fallen on difficult times. I was interested in hearing the administration's testimony. My colleagues and I on the Subcommittee on Public Health and Environment have heard administration officials testify again and again against suggested bills, saying that the administration has other authorities which would accomplish the same purposes. When we look at these, we find that they are not adequately funded and that there would be great difficulty in expanding these authorities for any additional purposes. I think we heard that again this morning.

I know how difficult it is to get adequate funding into the Kansas Agricultural Experiment Station, and it sounds to me that it is very unlikely that we are going to be able to expand funds or shift funds in order to do additional animal health research under laws that have already been enacted but are inadequately funded.

I might also state, as those of us on the Public Health Subcommittee are very much aware, that we presently have only 18 schools of veterinary medicine in this country. There are some schools on the drawing boards, and we have been anxious through the Health Manpower Act to support the schools of veterinary medicine.

Having said that, let me get to the important person, and that is Dr. Trotter. Dr. Trotter is dean of Veterinary Medicine at Kansas State University. He has served in this capacity for a little over 2 years. Prior to this, he was associate dean for 4 years, and for 10 years before that he was professor and chairman of the Animal Department. He is a native of Judson, Minn., so I guess it is only proper that I am sitting in Congressman Bergland's seat to introduce this witness.

Dr. Trotter is a fellow of the College of Veterinary Pathology and has done an excellent job at Kansas State University.

I thank you for being able to introduce Dr. Trotter. I would also say that I share with my fellow Kansas Congressman, Mr. Sebelius, his interest on behalf of the Kansas School of Veterinary Medicine.

Mr. FOLEY. Doctor, if you would please come forward with your associates, our colleague on the subcommittee, Mr. Sebelius, wants to make his welcome fully Kansaswide and I recognize him for that purpose.

Mr. SEBELIUS. Thank you.

It is a pleasure to join with Mr. Roy and welcome Dr. Trotter here on this presentation before the Subcommittee on Livestock and Grains.

STATEMENT OF DR. D. M. TROTTER, DEAN, COLLEGE OF VETERINARY MEDICINE, KANSAS STATE UNIVERSITY, MANHATTAN, KANS.

Dr. TROTTER. Thank you. I must certainly say I wasn't expecting this kind of greeting, but I appreciate it very much.

Mr. FOLEY. As we lawyers say, the witness has been fully qualified.

Dr. TROTTER. Well, I hope so.

I thank you very much for the opportunity to speak on behalf of House bill 3286, and perhaps to give you a little idea of some of the potential resources, at least from the standpoint of our college. It is a relatively modestly endowed college. Some of the others have more, some have less.

Mr. Roy mentioned the number of colleges in the United States. There presently are 20. We have 18 colleges in 17 States with two additional ones, which are being developed.

In addition to this, also States have either a veterinary college or a veterinary medical science department, which have potential for additional research in animal diseases. A worldwide problem in food production exists with the production of animal protein being particularly critical. As one of the Nation's largest producers of beef, Kansas exceeded \$1½ billion in beef production this past year, but it shared the Nation's loss of over one-quarter of a billion dollars for all animal disease loss.

These losses were often due to longstanding disease problems that have not been adequately researched.

The high costs and lack of funds certainly limit research on diseases involving food or companion animals. Food animals are expensive for research specimens. Often the animal must be sacrificed to complete the study, so there is no return to the research financing. At times, less expensive species can serve as "animal models" for research on larger, more expensive species. The studies must, however, be completed and the species involved in the disease conditioned and the purchase, maintenance, and research in the larger species is very costly.

All veterinary colleges or veterinary science departments presently have ongoing research. This research is usually so underfunded that only a few animals can be studied at any one time. This means it may take years to study a problem due to sheer lack of animal numbers and financial support. In our College of Veterinary Medicine, animal

health research projects on bovine cancer, neonatal diseases, environment toxicology, and others, are being seriously hampered by lack of funds.

Environmental studies on the effect on the animals of large animal production units needs more support. Laboratory research, animal environmental studies, are being done but more is needed.

Fertilizers, insecticides, herbicides, and other similar agents have greatly increased many areas of agricultural production. The toxicological effects of many of these chemical agents on animals or man still has much research needed as further advances in the use of chemicals are made.

Research has made great inroads on diseases transmissible from animals to man. Tuberculosis and brucellosis are just two of the more obvious that were formerly animal-to-man disease problems.

The beneficial effect of companion animals on the mental health of individuals and families points out the importance of research on the health and care of these animals as well as food animals.

Disease diagnosis research is vitally necessary. Colleges of veterinary medicine and department of veterinary science provide diagnostic laboratories for animal disease diagnosis. Many of these laboratories also do research and work in cooperation with State and Federal agencies. Our domestic disease problems are usually quickly diagnosed and controlled. Research on the diagnosis and control of nondomestic diseases must continue and expand to protect our food and companion animals.

Much of the funding for the type of research mentioned comes from meager funds from the Kansas Agricultural Experiment Station.

Increased potential in animal health research exists at most of the colleges of veterinary medicine and departments of veterinary science. Several thousand scientists in the colleges and departments could increase research activities if increased funding is available. The obvious potential returns, in terms of increased animal production, are unlimited if adequate research funding is provided. The only possible significant source for the type of funding needed is by a program such as that proposed by House Bill 3286.

Hopefully, this funding can be on a reliable continuing, year-after-year basis, so that long-range plans can be made. This bill is strongly supported in our area by our experiment station, the livestock association, and our veterinary medical association.

Thank you very much.

Mr. FOLEY. Thank you, Dr. Trotter.

We appreciate your appearance today.

If you could remain for a few minutes, we will proceed with some additional witnesses.

Our next witness will be Dr. Leo K. Bustad, dean, College of Veterinary Medicine, Washington State University, Pullman, Wash.

I want to exercise the privilege, not only as a member of this committee, but as chairman of this subcommittee, in welcoming you.

Washington State University is the principal educational institution of the State of Washington. Certainly, its agricultural activities have been of enormous value, not only to our State but to the entire region and the country. And I am very pleased to welcome the distinguished Dean of the College of Veterinary Science here today from the State of Washington.

STATEMENT OF DR. LEO K. BUSTAD, DEAN, COLLEGE OF VETERINARY MEDICINE, WASHINGTON STATE UNIVERSITY, PULLMAN, WASH.

Dr. BUSTAD. Thank you, Mr. Chairman, I am pleased to be here. I have submitted a statement for myself and Dr. Henson. I would like to elaborate on some of the points and address some of the points that were raised here today.

Mr. FOLEY. Without objection, the statement of Dean Bustad and Mr. Henson will be included in the record in full.

[The statement of Dean Bustad and James B. Henson in full follows:]

STATEMENT OF LEO K. BUSTAD, PROFESSOR OF PHYSIOLOGY AND DEAN, AND JAMES B. HENSON, CHAIRMAN OF VETERINARY PATHOLOGY AND DIRECTOR OF RESEARCH AND GRADUATE EDUCATION, WASHINGTON STATE UNIVERSITY

The capability of world food production is limited and must be increased to reach maximal level in an effort to feed the human population of the world. One of the important factors that limits food production is livestock disease. It is estimated that the annual dollar loss from animal disease by the year 1980 will be approximately 2.6 billion dollars if present trends continue. This cost will be reflected in the price of meat, milk, eggs and fiber for human utilization. Therefore, it seems obvious that every effort must be made to gain sufficient knowledge to combat the diseases and pests that decrease livestock production.

In thinking about this problem, we recalled that in the mid 50's Dr. M. E. Ensminger, while chairman of the Animal Science Department at Washington State University, published a very timely bulletin entitled "Problems and Practices of American Cattleman." It was initiated by a forward-looking Research Committee of the American National Cattleman's association who in their wisdom thought it necessary to "pin-point the nations problems in the beef cattle industry and to map the industries future in research and education." Dr. Ensminger's publication was a compilation of a nationwide survey designed to fulfill the Research Committees objectives.

Recently we reread this bulletin. Although almost 20 years have passed since this well done survey, that succinctly defined the problems, we must confess that the same serious disease and parasite problems that plagued the industry at that time are still with us.

Some progress has been made, but there is little basis for pride. We still have pneumonia, calf scours, bloat, shipping fever, food rot and many other "old" diseases along with some new ones. The relative importance of these "old" diseases may have changed but they're still taking a big toll that looms even larger now because of the increased value of each animal. It is not possible to document the financial losses caused by many of the more recently identified maladies. Among the new unexplained diseases we have the weak calf syndrome in the Northwest, and an assortment of disease entities many of which are probably viral-induced.

Research technology has advanced dramatically in the last decade. In addition, we in Veterinary Medicine have been training, largely through support from NIH, young, competent faculty members and researchers who are now ready and eager to apply their sophisticated training and expertise to animal disease problems. The funds proposed in this legislation would allow us to attack disease problems in depth at a scientific level never before possible.

Heretofore, our principle sources of money for animal research have been from the National Institute of Health of HEW. This support was principally for comparative studies and were justified principally on application to problems in people. Without detracting from the importance of this work and the necessity for its support, we have to admit it has done little toward answering many major disease, nutrition and management problems in meat animals. This proposed legislation on animal health research will make it possible for us to perform needed medical research on at least some of the problems listed below which my associates and I feel are very important and are ready to attack if support is forthcoming.

1. Effective means of controlling bovine respiratory diseases with the elucidation of the causative factors and interrelationships that precipitate this costly disease in cattle.
2. Evaluation of the immune response of cattle and the proper use of vaccines.
3. The delineation of the importance of recognized disease agents and the isolation of new ones such as the reo-like virus and corono-like virus recently incriminated in calf diarrhea.
4. Effective control of calf diarrhea.
5. Development of information on the etiology and control of the "Weak Calf Syndrome".
6. Development of effective control methods for infectious bovine keratoconjunctivitis (Pink Eye) in cattle.
7. Development of effective control mechanisms for respiratory diseases in horses.
8. The study of nutrition in horses.
9. The development of herd health approach to disease prevention and the use of profile testing and computer diagnosis.
10. Evaluation and control of Tansy Ragwort poisoning and other important toxic agents which cause significant losses in livestock.
11. Control of parasites by immunologic means.
12. The control of viral neoplastic diseases of poultry.

Mr. FOLEY. Now we can ask the dean for his comments.

Dr. BUSTAD. Thank you very much. Somebody went around the world in 80 days. I have been 73 days around the northwest, principally in the State of Washington, but I made the rounds also in Oregon, Idaho, and Montana. I have spent most of my career in animal research, but devoted to people problems. So, when I decided to come back to the State of Washington, I decided to find out what had been going on since I left. And I have been around the State and talked to a lot of livestock groups, wool growers, stockmen, and veterinarians. And I asked them what their problems were and they didn't hesitate in telling me what their problems were, and they were many.

In fact, they sounded like the same ones that I was facing in the clinic at Washington State University in the late 1940's. And I also went back and read a pamphlet that was put out by Mr. Ensminger in December of 1955. He was commissioned by the American National Cattlemen's Association to make a study on the U.S. cattle to try to find out what their problems were.

I read that and in 20 years I couldn't see that there had been much progress made in animal disease research. So I went back to the campus and I called my director of research and some of his associates together and I said: "What in the world has been going on since I left?" And they said: "Well, the problems are very complex." And I certainly readily admit that. But my 10th law states that there is no problem looked at that isn't complex.

And certainly these problems are difficult. And they said that money is needed and I said, "How many people have you got in research here?" And they said: "Well, we have 21½ people on the experiment station plus their associated staff to help them." Well, that is insufficient in my estimation to get the job done. And they said: "Well, with some money we are ready to go."

Now, in looking at the research dollar, I am impressed with the amount of money that has gone into research but chiefly for people problems and I have come to the conclusion after this survey, that it is time that we spent more money on disease problems in livestock because of the progress that has not been made. And so that is the program that I am attacking and making a plea that this money can be certainly utilized now.

And I asked, as I told you, my associates why no progress had been made during this time? Well, in the early days, of course, we didn't have elegant techniques, sophisticated equipment, and this type of thing. In my research, which when I left California was at the level of \$2 million, for which I was responsible and which was all people-directed, but that research and the training programs we had, with that we have trained some people who are now ready to go. We have the sophisticated equipment and we have excellent techniques and they are ready to go. I have a bunch of tigers there that are ready to attack the problem, but we have to obtain the finances to do it. And I believe that this bill will certainly go a long way toward helping us do this.

I appreciate very much being here.

Mr. FOLEY. Thank you very much. We appreciate your statement in support of this legislation. If you also could remain a few more minutes, we would like to call you back with the other witnesses for questioning.

The next witness is Dr. Richard B. Talbot, dean, College of Veterinary Medicine, University of Georgia, Athens, Ga.

Mr. Talbot, we welcome you to the subcommittee.

STATEMENT OF DR. RICHARD B. TALBOT, DEAN, COLLEGE OF VETERINARY MEDICINE, UNIVERSITY OF GEORGIA, ATHENS, GA.

Dr. TALBOT. Thank you, Mr. Chairman, and members of the committee. I am pleased to have this opportunity to express my views regarding H.R. 3286.

I also have submitted a formal statement.

Mr. FOLEY. Without objection, that will be included in the record in its entirety and you may summarize the important points.

[The statement of Dr. Talbot in full follows:]

STATEMENT OF RICHARD B. TALBOT, D.V.M., DEAN, COLLEGE OF VETERINARY MEDICINE, THE UNIVERSITY OF GEORGIA

Mr. Chairman and members of the committee, I am pleased to have this opportunity to express views regarding H.R. 3286, and other related bills to authorize the Secretary of Agriculture to encourage and assist the several states in carrying out a program of animal health research.

As Senator Talmadge stated when he introduced S. 1388 in the Senate, "Almost every metropolitan daily that one picks up these days has something about high food costs in it." Of paramount concern to housewives is the cost of protein. A significant factor in the cost of producing animal protein is the loss each year from animal and poultry diseases. This annual loss is estimated to be 3.0 billion dollars, and makes disease an intolerable waste of national resources. Livestock and poultry producers' organizations agree that disease and parasites are the greatest handicaps to production and profits; therefore, it behooves us to make every attempt to increase the efficiency of our producers by reducing the losses from disease and parasites.

As long as farm commodities were in relative surplus, some justified the neglect of veterinary research by offsetting disease losses with additional production. That era has passed! We must now garner the saving of each animal protein unit. The greatest return can be experienced by expenditures in animal disease research leading to eradication. It is truly amazing that we have escaped animal disease epidemics thus far. Our geographical isolation has served us well in the past but these barriers have also disappeared.

Animal health research has always been an integral part of the academic program of veterinary colleges. Many veterinary medical faculty members have gained national stature for their outstanding research and scientific findings. All of the veterinary colleges in the United States have encouraged research proj-

ects. College research workers have studied to some degree almost every infectious, parasitic, metabolic, nutritional and genetic disease of livestock and poultry. Each veterinary college represents a pool of 50 to 150 highly qualified and specialized scientists. At the present time, many of these potential researchers are not adequately supported research-wise to reach their potential as scientists. This reservoir of talent awaits fiscal encouragement. The consumer stands to reap the rewards of this relatively small expenditure.

Veterinary college researchers have always been interested in and have conducted research on diseases and abnormal conditions of economic importance to livestock owners. These include hog cholera, leptospirosis, erysipelas, parasites, liver abscesses, plant poisonings, Marek's disease of chickens, rabies, anaplasmosis, nutritional anemia of baby pigs, shipping fever, infectious bovine rhinotracheitis and enterotoxemia, just to name a few.

Animal health research also provides specific benefits to the consumer through control of those animal diseases transmissible to man. There are more than 100 zoonoses—animal diseases that may be transmitted to man. As any one of these is eliminated, a source of disease for man is also eliminated. Veterinary research has provided new knowledge of brucellosis, tuberculosis, sleeping sickness, hookworm disease, leptospirosis, and other diseases transmissible to man from animals. At one time in recent years, brucellosis or undulant fever as it is sometimes called in man, was considered the most important of the zoonoses. As a result of research and control programs for bovine brucellosis the number of human cases is considered insignificant today. Considerable veterinary research talent has been used in the conquest of human disease. This is commendable, but sometimes this diversion occurred because there were not research opportunities in veterinary medicine due to inadequate funding.

Research on diseases of man's companion animals—horses, dogs and cats—has generally been neglected by animal health researchers. Forty-five percent of the United States families have a companion animal though and they expect the best available health care including the knowledge of disease prevention in these animals.

No one can measure absolutely the benefits of animal health research in terms of dollar savings to the livestock and poultry industries and ultimately to the consuming public. Conservative estimates, however, place the total value of United States livestock and poultry and over \$30 billion with an annual loss from disease at over \$3 billion or about 10% of the total value. As an example of benefits that can accrue from animal health research, estimates regarding Marek's disease research can be cited. Marek's disease has caused millions of dollars of damage to the broiler industry in the past few years. Just four years ago, condemnations from the disease often were 15% of the slaughtered birds from some flocks—a loss that ultimately had to be passed on to the consumer. Researchers at our University were instrumental in the development of a vaccine to prevent the disease and today condemnations are minimal. It has been estimated that when it becomes practical to vaccinate all broilers, the use of this one practice alone will result in adding as many as 5% more broilers to our total meat supply simply by reducing mortality rates and condemnations.

Research is the most direct approach to improved methods of disease control and efficient production. The taxpayers' interest can be advanced best by research which proves successful. The best assurance of success is the availability of the correct amount of resources over a necessary period of time. Poorly funded, short range, scatter-gun types of research are far costlier than their converses. The essential challenge in animal health research, as in all other types of research is to stimulate individual creativity. An environment which encourages innovation is essential. This requires freedom for basic research as well as availability of modern equipment and facilities. The Animal Health Research Act would provide a base to assist in such endeavors. I earnestly solicit your support for the bill.

Dr. TALBOT. I would just like to comment on the impact that passage of this particular bill could have on animal and poultry production in our region of the country, and to attempt to illustrate this I have selected three areas of research expertise that is present in our faculty and I would like to comment on the effect that the bill would have on these three areas, and many other areas, of course, could be selected to illustrate the point.

The University of Georgia, College of Veterinary Medicine has about 80 faculty members that devote approximately 30 percent of their time and effort to animal health research. There are also 50 graduate students in the college that work with the faculty members on over 100 research projects. If this Animal Health Research Act is enacted and funded, the faculty of our college would be able to multiply its research effort many fold. This would be possible because the scientific expertise is already there, but what is lacking is the continuous support for laboratories and animal technicians, for laboratory equipment, supply moneys, for animal holding and for isolation facilities necessary to conduct animal research.

Most of the research in our college is presently supported by grants and contracts from State and Federal agencies, from livestock and poultry commodity groups, and from private foundations or commercial companies. But the majority of the work supported in this manner is of short-term at narrow interest and an applied nature. Money is usually not provided for expensive equipment items, for animal holding facilities or long-term support of highly skilled para-medical personnel.

Now, we are justifiably proud of the expertise at the University of Georgia in the area of aviary research. Our poultry disease research center has played an important role in the poultry and egg industry in Georgia and tomorrow I believe a representative of that industry nationally will testify before your subcommittee. But our group at the university was instrumental in the development of a highly successful vaccine against the Marek disease of chickens, but it was not until industry and other kinds of support was obtained, that the faculty could fully exploit their laboratory findings and apply them to large-scale field trials.

At the present time, these same researchers are participating in a crash program to test and evaluate vaccines that are successful in preventing gnotobiotic, New Castle disease.

And as the Congressman from California testified and I am sure you are aware, the Federal Government spent over \$40 million to control and eradicate this, particularly in California.

Some State support for the research program that our faculty has been involved in has been provided on an emergency basis but the researchers in Georgia are still hampered in their efforts by the lack of physical facilities necessary to work safely with such a highly contagious disease.

So that the continuous and dependable source of support, such as provided in the Animal Health Research Act, would alleviate many of these pressing problems.

Adequate facilities for housing research animals could be provided as well as provision made for training technical help. It would not then be necessary to abandon existing research projects, and cash programs like this could be funded.

Another area of expertise in our college is in the field of animal parasites. Here again we have experienced and trained faculty that seek research support from a variety of sources. The problem of parasites is of major importance in the Southern part of the United States but very little financial support is available. It is much easier for our researchers to get funds on human health-related programs, such as

malaria, than to get support for research on parasites, and livestock. Research in this area is difficult to get, as has been pointed out by several witnesses here this morning.

The last example I would like to mention is in the area of animal reproduction. Again we have proven researchers and experienced researchers working in this area but it is far easier to get financial support for research programs related to human reproduction than it is on reproduction diseases of animals.

The Animal Health Research Act would provide much needed support for a variety of livestock problems. It would train a stable basis of trained paramedicals to complement the researchers present at all of these schools. It would provide for the purchase of equipment that cost more than any small grant would allow and it would provide the means for expanding and improving animal holding facilities so that research could be conducted on cattle and swine in significant numbers rather than on rats and mice in model systems made necessary because of the shortage of space.

In summary, the Animal Research Act could do much the same for animal health research as the Hatch Act and thereby assist in the food production and in the overall health of the citizens of this Nation.

Thank you very much.

Mr. FOLEY. Thank you very much.

We appreciate the testimony. If you could remain, we will proceed to recognize the next witness, and then come back to ask questions of all the witnesses.

I am going to ask the distinguished member from Louisiana, Mr. Rarick, to introduce the next witness.

Mr. RARICK. Thank you very much, Mr. Chairman. It is indeed my pleasure to introduce to the members of the subcommittee Dr. Edward Besch, dean of the College of Veterinary Medicine, Louisiana State University, which is located at our State Capital at Baton Rouge. LSU is also known as the home of the LSU Fighting Tigers.

Dr. Besch has been an important force in the establishment of the new school of veterinary medicine on the LSU campus. The entire State is proud of the work that he has done in establishing the school which began its first class only last January.

Dr. Besch presently serves as advisor to research to the Surgeon General of the Army in the field of veterinary medicine. He is distinguished in his field and I commend him to the members of this committee.

It is my understanding Dr. Besch does not have a prepared statement, but I am certain the members of the subcommittee would be happy to hear any remarks he might desire to give at this time.

Dr. Besch, do you desire to make a statement?

STATEMENT OF DR. E. D. BESCH, DEAN, COLLEGE OF VETERINARY MEDICINE, LOUISIANA STATE UNIVERSITY, BATON ROUGE, LA.

Dr. BESCH. No, I don't have a statement, now, other than that I will fully support this legislation, and those of us in Louisiana consider it very valuable to our industry and the State and Nation.

Mr. RARICK. Would you favor preparing a letter or a short statement for inclusion in the record?

Dr. BESCH. Oh, I have already submitted one to Chairman Foley.
Mr. FOLEY. Dr. Besch's statement will be included in the record at this point.

[The statement of Dr. E. D. Besch follows:]

LOUISIANA STATE UNIVERSITY,
AND AGRICULTURAL AND MECHANICAL COLLEGE,
Baton Rouge, La., November 2, 1973.

Hon. JOHN R. RARICK,
House of Representatives,
Washington, D.C.

DEAR MR. RARICK: On November 13 and 14, the Livestock and Grain Subcommittee of the House Agriculture Committee will hold hearings on H.R. 3286, the Animal Health Research Bill, which proposes "to authorize the Secretary of Agriculture to encourage and assist the several states in carrying out a program of animal health research." This is important legislation, worthy of your consideration and support.

Those of us in Louisiana who have helped promote this legislation over the last two years are aware of your long tenure on the Agriculture Committee and of the significant role you have had in shaping meaningful legislation in support of the agriculture community. We consider H.R. 3286 long-needed legislation to make possible an expanded animal disease and parasite research program at the State level. The basis for such expansion in veterinary research exists within the 19 schools of veterinary medicine and in the 35 agricultural experiment stations in the U.S. and Puerto Rico, which do not have schools. However, to achieve this long-sought goal, legislation must be enacted providing for a long term categorical mechanism with a formula for allocating appropriated funds. Authorization for such a support base is provided for in H.R. 3286.

Congressman Rarick, I plan to be present for the hearings on November 13 and would appreciate the opportunity to discuss our advocacy of this bill with you, but at your convenience.

Thank you for your interest and support of the LSU School of Veterinary Medicine.

With warm personal regards,

EVERETT D. BESCH,
Dean.

Mr. RARICK. Thank you very much.

Mr. FOLEY. The next witness is Dr. Phillip T. Pearson, dean of the College of Veterinary Medicine, Iowa State University, Ames, Iowa.

Dr. Pearson?

**STATEMENT OF DR. PHILLIP T. PEARSON, DEAN, COLLEGE OF
VETERINARY MEDICINE, IOWA STATE UNIVERSITY, AMES,
IOWA**

Dr. PEARSON. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, I am pleased to have this opportunity to speak in support of H.R. 9554, the Animal Health Research Act.

The importance of this legislation lies in the fact that it would provide critically needed research support in areas vital to the health and welfare of the Nation and the world. In the past, great strides have been made in the control and prevention of animal diseases and public health problems. Nevertheless, animal diseases still cost the United States an estimated \$3 billion each year. There is urgent need for additional funds to support research programs in such areas as infectious and nutritional diseases of animals.

The mission of veterinary medicine is the protection and improvement of the health and economic welfare of the Nation and world. This

entails responsibilities in research to safeguard the health and productivity of food-producing animals, to control diseases of livestock that are transmissible to man, to provide medical care for companion animals, and to care for the health of laboratory animals essential to animal and human health research. Veterinarians also participate in comparative medicine research to help conquer major medical threats, such as cancer and heart disease, as well as assist in the protection of the environment, and other vital areas of public health.

Iowa is one of the 17 States that has vigorously supported veterinary medical education programs. The College of Veterinary Medicine at Iowa State University was established in 1879, the first veterinary college in a land-grant university. It has an academic and professional faculty of 135 members who devote a portion of their time to research including 14 faculty members whose major assignment is research.

In addition to five academic departments and a diagnostic laboratory, all of which are involved in research activities, the college of veterinary medicine also has a veterinary medical research institute for the investigation of animal diseases, and a biomedical engineering program whose thrust is in biological investigations. These are both multidiscipline research units. Also an outstanding college of agriculture and cooperative extension service at Iowa State University help relate needs of the producer to veterinary research units and assist in disseminating the results of this research to both producers and consumers. The National Animal Disease Laboratory located in Ames, Iowa, has made possible important research contacts for the faculty of our college.

Iowa is number one in the production of animal protein in the United States. It has the largest number of general veterinary medical practitioners—approximately 800—of any State in the Nation. The cash receipts from the sale of Iowa livestock totaled \$3.261 billion in 1972. Iowa ranks first in the Nation in swine production and produces 23.2 percent of the entire national supply. In 1972, this involved 20,800,000 hogs with a cash receipt value of \$1.266 billion. In the number of cattle and calves, Iowa ranked second in the Nation in 1972 with cash receipts totaling \$1.648 billion. Iowa ranked sixth in the number of sheep and lambs produced and seventh in the number of turkeys.

These facts point up without question the importance of the animal health research bill to Iowa. Those of us concerned with veterinary medical research in the State feel that this bill, if passed and funded, would prove to be extremely effective in meeting a critical need. The research it would support is vital for an increase in the animal protein supply and to improving the health of both man and animals in this Nation and the world.

Thank you, Mr. Chairman and members of the committee. It was a pleasure for me to be here. Should you have any questions, I will be glad to attempt to answer them for you.

Mr. RARICK. Thank you very much, Dean Pearson, for your valuable testimony. I hope that you will be able to stay so that if other members of the subcommittee have any questions at the conclusion, they can ask you.

The Chair will recognize our very distinguished colleague from the State of Nebraska, Mr. Thone.

Mr. THONE. Mr. Rarick, and members of the subcommittee, very briefly, I would like to introduce to you Dr. Marvin Twiehaus, who is

head of the Department of Veterinary Science of the University of Nebraska.

Dr. Twiehaus is a widely acknowledged expert in the field of veterinary science. He is a most warm person individually and a most distinguished educator. I am sure that he can contribute to the contribution being made by this fine panel we have this morning.

Chairman RARICK. I would like to have unanimous consent that his statement that he submitted November 8, be included in the record at this time.

Mr. RARICK. Without objection, so ordered.

[The statement of Dr. Marvin Twiehaus follows:]

STATEMENT OF M. J. TWIEHAUS, CHAIRMAN, DEPARTMENT OF VETERINARY SCIENCE,
UNIVERSITY OF NEBRASKA, LINCOLN

Mr. CHAIRMAN: I am submitting a statement in support of legislation for HR 3286—The Animal Health Research Act.

Those of us in agriculture share a most difficult *job ahead* in providing the essential necessities of life—food, clothing and shelter, for not only our people in America, but those in other countries as well. Food of animal origin is *essential* for good nutrition and also is expensive to provide. Generally speaking, countries that do not have an adequate supply of food from animal origin remain as backward or undeveloped countries. Thus, food is a major factor in our national economy and welfare, and it is essential that we assure our consuming public of an adequate quantity and quality of animal food products.

The greatest loss in our livestock and poultry industries is directly associated with disease. The total value of livestock and poultry in the United States is over \$30 billion. The National Academy of Sciences estimates that a loss of 10% or \$3 billion results from disease each year. The reduction of losses from diseases would increase production in animal agriculture without any increase in the number of breeding animals. Congress making funds available for research in the area of animal disease would result in findings which could substantially reduce these losses. Thus, research in the control of animal diseases is the most direct approach to the efficient increase in food of animal origin.

We cannot expect our livestock producers to directly support the research that is needed to bring about more efficient food production for our total human population. Food today is everyone's concern—not only the producer's but also the processor's and the consumer's.

Our current method of food production which involves the concentration of a large number of animals per unit has increased the inherent risk of greater and more frequent exposure to disease. In the past, federal research monies for disease investigations have been meager and not adequate to keep pace with our animal production. The producers have tolerated losses of 10, 15 and even up to 25%; but this is no longer possible due to the increased cost of animal production—labor, feed, facilities, etc. The country also cannot tolerate this loss, for with the increase in population and increased consumption of animal products per capita, food of animal origin is in short supply.

Two devastating exotic diseases, African Swine Fever and Foot and Mouth Disease, are lurking at our borders and could gain entrance into our livestock population here in the States. Two exotic diseases gained entrance into our livestock population in the past several years—Visceral Newcastle Disease and Venezuelan Equine Encephalomyelitis. Further research and facilities are needed to develop a means of prompt detection and control of the exotic diseases.

Diseases transmitted to man from animals—rabies, histoplasmosis, toxoplasmosis and fungi from moldy grains all need further research to bring about a better understanding of their control.

In conclusion, legislation, The Animal Health Research Act, is needed to support the livestock industry in order that more efficient and greater production of animal products will be forthcoming. The consuming taxpayer will be the recipient of a safe and wholesome meat supply. Prices will be acceptable to the consumer and allow a margin of profit acceptable to the producers and processors. To most of us these are exciting times in agriculture, and we certainly must look forward to meeting our challenge in bringing about ways and means of more efficient food production to meet the demands of our growing population.

**STATEMENT OF DR. MARVIN TWIEHAUS, HEAD, DEPARTMENT OF
VETERINARY SCIENCE, UNIVERSITY OF NEBRASKA, LINCOLN,
NEBR.**

Mr. TWIEHAUS. Mr. Chairman and fellow members of the Livestock and Grains Committee, I have submitted a statement as Congressman Thone indicated. I would also like to make some remarks regarding research and animal diseases, as far as departments of veterinary science are concerned.

Mr. RARICK. Certainly, proceed.

Mr. TWIEHAUS. I wish to discuss with you the activities and some of the problems that we in the department of veterinary science are confronted with in animal disease research.

Research funds in animal diseases in most departments of veterinary science have always been meager. This has led departments and staff members to seek other funds because most of the institutions have an unwritten policy that researchers have to produce or perish. So as a result, they do seek other funds and these other funds have been primarily the NIH and NS funds. They, of course, have been related primarily to human health as most of you folks know.

These moneys have certainly led to more basic research, have provided funds for equipment and graduate students which certainly was needed in the area of veterinary science. But, gentlemen, it has not provided the research in animal diseases which are the greatest single deterrent to successful livestock production. In other words, we have not been able to gear our research program in the direction of solving livestock and poultry problems in our States.

Due to the increased demand for raw meat, our methods of production of animals and poultry have certainly changed in recent years, as we all know. And these modern methods of production, of course, have also enhanced the disease situation within large feedlots where we have 20,000 or 40,000 or 200,000 heads of cattle put together and the same number of poultry in the poultry houses for the egg production and the broiler production units, and so forth. So these are some of the problems that have developed because of our modern methods of production. And, as a result, we have not helped our disease situation as far as losses are concerned. Some of our best swine producers still lose approximately 25 percent of the pigs that are feralled. Gentlemen, this is a tremendous loss that we need to stop and we need to reduce it, and this can be done only by further research of animal disease problems.

Many disease problems, of course, are because of the huge concentrations of livestock.

We also have the dysentery problem, the baby pig scours that confront us. We have infertility problems in our large swine units. We have infertility in our beef herds where we are getting only a 75- to 80-percent calf crop and we should be getting 90 to 95 percent.

The other problem that is frustrating to our researchers in the department of veterinary science is, of course, the Federal funds are usually on a 3- to 5-year basis and as a result, why, when this program runs out the researcher has to start looking for other research moneys and, of course, this brings about frustrations to the research workers.

I would like to point out briefly that we have had a marked increase in cost in our animal disease research. We have at the University of

Nebraska given the animal science department work primarily with gnotobiotic and germ-free cows. It is necessary for us to purchase pregnant animals in gestation about to calf or about to farrow and take the offspring from the cow or from the sow and place it in units so that we can do disease research in the so-called germ-free animals. Well, these animals cost us money.

Today if we have to buy a pregnant cow, this is going to cost us anywhere from \$450 to \$600 and frequently when we are doing research we need animals rather desperately and quickly and, as a result, we can't go around shopping for animals, going to every community sale and we don't want this type of animal to do research anyway. If we buy a pregnant sow today, this pregnant sow is going to cost us \$250 or \$350 or more. Well, this gives you one animal so you can see that our dollars don't go as far as they have in the past.

I would like to point out to this committee that research dollars do pay dividends. I would like to cite some examples to this committee of what research dollars have really done.

We in the department, in cooperation with the Federal Government, were instrumental in developing the antibodies for hog cholera diagnosis. With this research that went into this it was possible to eradicate it. If this test wouldn't have been developed, we would be still living with hog cholera today. Hopefully in the United States, in the not too distant future, we can be completely free of hog cholera. Another example I would like to cite where research dollars pay dividends is in the recent research that we did in calf scours. It is an old disease. It has been with us over 100 years that we have been seeking the answer to it. Within the last 7 years our departmental members have been able to find that there are two viruses associated primarily with calf scours. Out of this research has come a vaccine for one of the types. We haven't been successful in getting on the market that second vaccine. That is being prepared against the second virus. This is important because there is an interference between the two viruses. When you put both of these in a new-born calf in the form of vaccine, we find that these vaccines worked poorly. Neither vaccine works very well. We are doing further research in this area to overcome this by giving it to the cows.

Here, again, we have to buy valuable diseased animals because certainly no rancher or farmer wants us to go out with an experimental vaccine and experiment on his group of cattle and test this product. So this is why research is expensive today.

The animal disease research bill is needed to support the livestock industry in order that more efficient and greater production of animal products will be forthcoming. The concerning taxpayer will be the recipient of adequate, safe, and wholesome meat. Prices will be acceptable to the consumer and allow a margin of profit acceptable to the producer and processor.

To most of us these are certainly exciting times in agriculture and we certainly must look forward to meeting our challenge and bringing about ways and means of more efficient food production to meet the demands of a growing public. Our growing public still likes raw meat.

Thank you.

Mr. FOLEY. Thank you very much, Dr. Twiehaus for an excellent statement. We appreciate your appearance and hope you will be able to remain to answer any questions by the subcommittee.

The Chair will now recognize the distinguished gentleman from Minnesota, Congressman Zwach to introduce our next witness.

Mr. ZWACH. Members of the committee, it is my privilege to introduce the dean of our College of Medicine at the University of Minnesota. He has had a long and distinguished career. He is originally from Georgia, so he comes from that great country down there.

And I would like to take this opportunity, also, to introduce Dr. Pomeroy in the audience. He has been outstanding for many years in turkey and poultry and livestock work. He has been in Minnesota for a long time. Dr. Ewing has just come to Minnesota recently but we have great fine reports about you.

You know, Mr. Chairman, these folks have said a great deal in a short time. I guess they have had to do a lot of work in preparing for their testimony today.

Mr. MELCHER. Mr. Chairman, while Mr. Ewing is approaching the witness table I want to on behalf of Congressman Bergland who cannot be here because he had an important energy meeting this morning, in his absence, welcome Dr. Ewing to the subcommittee.

Mr. ZWACH. I join in that.

Mr. RARICK. It thus appears that you have bipartisan support.

STATEMENT OF DR. SIDNEY EWING, DEAN, COLLEGE OF VETERINARY MEDICINE, UNIVERSITY OF MINNESOTA, ST. PAUL, MINN.

Dr. EWING. Thank you very much, Mr. Chairman, and members of the committee. I think it is appropriate that the energy crisis is receiving the attention that it is receiving. We all are aware of the shortage of energy.

Dr. Q. M. West, Administrator of the U. S. Department of Agriculture's Economic Research Service, has recently put food shortages in perspective by referring to them as "the poor man's energy crisis." Our energy crisis which is reflected today in the shortage of fossil fuels is acute indeed but the shortage of food will make the other energy crisis pale. The importance of the availability of high quality food, which is man's energy, can hardly be overestimated. Animal protein comes at a premium, of course. A diet which includes large amounts of animal protein is much more expensive than one which is only composed of cereals and a population which eats grain directly without converting it to animal protein can survive with relatively little loss of energy to the eco-system, but the quality of life in such population is much different from that which is enjoyed in our so-called developed countries. Eating animal protein rather than cereal grains is a luxury which we can afford only if we produce livestock products very efficiently.

Just as we see flares of human disease problems when we concentrate people, as in troop camps during war, so we also see animal disease problems as we concentrate our livestock into exceedingly dense aggregates. The spread of infectious diseases under these circumstances is rapid indeed. Now, who should bear the cost of solving the problems which result from our concentrated agricultural prac-

tices? Certainly the producer is concerned but it is also a problem for the consumer and for the middleman.

We have heard a great deal about the success of the green revolution and that success was based on research findings which make it possible to grow disease-resistant crops with high energy content. This Animal Health Research Act will help scientists to make similar advances in the production of livestock.

Now, one of the major benefits of this bill will be its influence on the training of our next generation of scientists. Well-trained veterinarians and research specialists are in great demand to deal with the very broad spectrum of disease producing organisms which affect our livestock. Without funds such as those which would be supplied by this act, we have no hope of adequately training these individuals beyond the basic veterinary medical education.

Furthermore, we have an acute shortage of trained faculty to man the 19 veterinary colleges in America, and the several veterinary science departments in America.

Funds from this bill would support research which would be part of the training effort in producing our next generation of scientists which we so badly need.

I do not wish to be parochial but I would like to state that in Minnesota our research support has declined from a peak in 1966-67 of over \$760,000 down to approximately \$300,000 in this fiscal year.

Now that is an absolute decline. We have less than half what we had in fiscal year 1966-67 for research. And you add to that the inflationary losses which have been alluded to earlier and you can see indeed that our effort is much reduced from the mid-1960's.

Like Dean Bustad from Washington State, I have some tigers at Minnesota who are ready to go.

I will give you the details of our human resources, but I will assure you that they are considerable indeed. I hope that H.R. 3286 will help us to exploit the talents of those tigers.

Thank you.

Mr. RARICK. Thank you very much, Mr. Ewing, for an excellent statement on behalf of the legislation before us.

Are there any questions from members of the subcommittee?

Mr. FOLEY. At this time we invite all of the witnesses who have testified to come forward and occupy the chairs at the witness table, and the claims in the first row. Those members of the subcommittee who have questions, can ask them now.

Mr. RARICK. Would the distinguished educators who have testified this morning please come forward? I believe there were eight of you. Can we have eight chairs at the witness table?

At this point, I recognize Chairman Foley for any questions he may have.

Mr. FOLEY. I will yield to Mr. Melcher.

Mr. MELCHER. Thank you.

I would like to establish in the hearing record the opinion of the witnesses as to whether or not the discussion of the Department of Agriculture officials about the contract and the public law that was mentioned, I believe it was Public Law 89-106, section 2, whether that is a satisfactory method of providing funds for research.

And I suppose, Dr. Clarkson, you could speak for the group. If there are various opinions, I would certainly like to know.

Dr. CLARKSON. Well, I have a very strong opinion about this and, as you know, Congressman Melcher, I spent most of my adult life in agriculture in the Agricultural Research Service. So that I have some knowledge of how these things are handled. There is authority in the Hatch Act for support of all research relating to agriculture. The net effect of varying demands upon the directors of the State experiment stations is that this year out of an amount somewhat in excess of \$70 million, there is something over \$3 million that goes into animal health research. And the probabilities of this increasing are not right.

The Hatch Act, as has been pointed out by the Department witness, does not cover all of the colleges of veterinary medicine. The demands upon the agronomy and horticulture and pesticides and the environmental problems associated with the use of agricultural chemicals are so great that I do not see the possibility of increase in the animal health area, unless there is a specific pronouncement on that subject by the Congress. And that is the value of this bill.

Also, this bill would give to the colleges of veterinary medicine and the divisions of veterinary medical science, a continuing source of funds and one that they count on. As several of the witnesses have already mentioned, the on-again and off-again source of funds and which they cannot rely on for long-range research will not do this job. And research with farm animals and, particularly, livestock, this is a very expensive undertaking. So that I am very strongly of the belief that a specific pronouncement by the Congress as envisaged by this bill is necessary.

Mr. MELCHER. Thank you, Dr. Clarkson. Do any of the other witnesses have more to add on that particular point?

Mr. FINDLEY. Mr. Chairman, may I ask if Dean Meyer Jones of the University of Illinois College of Veterinary Medicine is here?

Mr. JONES. Yes.

Mr. FINDLEY. Mr. Chairman, I think it appropriate for Dean Jones to come forward, if he likes, and join the other witnesses.

Mr. RARICK. Indeed, we would like to have him with the other witnesses who testified. We certainly want the proceedings to show your presence.

Mr. JONES. Representative Foley does have a statement from me which I would hope will be entered into this record?

Mr. FOLEY. Without objection, that will be put into the record.

[The statement of Dean Meyer Jones, University of Illinois, follows:]

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN,
COLLEGE OF VETERINARY MEDICINE,
Urbana, Ill., November 7, 1973.

Representative THOMAS S. FOLEY,
Chairman, Livestock Grain Subcommittee, House Agricultural Committee, Longworth Building, Washington, D.C.

DEAR REPRESENTATIVE FOLEY: I wish to comment and submit for the Committee record our views on H.R. 3286, the Animal Health Research Bill, and other related bills on which your Subcommittee will be holding a hearing on November 13 and 14. I trust these comments can be entered into the record of the Subcommittee hearing.

It is essential to the welfare and health of the people of the United States that all reasonable steps be taken to insure the food supply for citizens of this country and for export to the rest of the world. H.R. 3286 and companion bills (as well as S. 1388) are directed at this general concern. These bills would provide funding for animal health research directed at the prevention and control of disease losses which now ravage the livestock industry of the nation.

The 1972 census data indicate that the cash receipts for livestock and livestock products totaled \$35.5 billion. Estimates of animal losses in 1972 due to diseases and parasites are reasonably estimated at \$3.6 billion. Specific data are available in some instances: (1) it has been customary to estimate animal death losses in dairy calves at 25%; recently reliable scientific study demonstrated that when 20% of the dairy calves born in one year died from disease, a 37.5% loss of profit resulted in the herd operation; and (2) it has been customary to estimate the animal losses of liveborn pigs at about 35% because only two out of three born alive reach slaughter. If some portion of this death loss could be avoided, there would be a substantial contribution to the nation's food supply, an increased efficiency of operation and profit to the livestock producer and a consequent reduction in price of the product distributed to the consumer.

We have both an obligation and a responsibility to seek ways to minimize the losses in food animal production caused by animal diseases and parasites. Your support of H.R. 3286 and companion bills will permit the colleges of veterinary medicine and the state agricultural experiment stations in the nation to: (1) contribute to the solution of animal health problems now harassing the food animal producer; (2) assist in the training of scientists specialized in problems related to prevention or control of animal diseases; and (3) provide for the specific knowledge necessary for the nation to respond quickly and effectively to disease outbreaks ravaging the livestock industry and the food supply of the American people. The state of Illinois has shown its commitment to these goals by decades of financial support for the animal disease research and control programs of the College of Veterinary Medicine at the University of Illinois and of the Illinois Department of Agriculture. The latter agency has annually allocated money for the purchase of supplies and equipment by the scientists at the College of Veterinary Medicine of the University of Illinois for research on food animal diseases. Unfortunately these monies have been a "mere drop in the bucket" when the total problem of animal disease losses is evaluated. This College of Veterinary Medicine is only one of eighteen in the U.S.A.; therefore, it serves other states of the nation in many ways and should be viewed as a resource beyond the state of Illinois in its services to the nation at large. Similarly the research knowledge gained from monies contributed by the state of Illinois through the University and the Illinois Department of Agriculture to solving problems of animal disease that plague the nation at large comprises a national resource instead of serving solely the state of Illinois. For these and other reasons, it is in the interest of the American people that the Animal Health Research Act (viz., H.R. 3286, etc.) not include a requirement for matching funds from non-federal sources to make a state eligible for participation. In addition inserting such a matching requirement is contrary to the principle of revenue sharing, will not aid in achieving research goals and in fact serves only to impose added administrative burdens.

In determining "research capacity" of a participating institution in the animal research bills, we strongly urge that the general concept or unit of a "scientist-man-year" (SMY) be used. A simple enumeration as staff members found at a research institution is not an adequate measure of research capacity. The SMY unit recognizes that for effective production capacity a scientist must be supported by technician manpower, suitable equipment and space, and an adequate budget for supplies essential to the project. The concept of SMY unit has proved to be the best measurement of research capacity that the Agricultural Research Service has evolved through many decades of experience. We support the use of this concept in the legislation currently under consideration.

This College of Veterinary Medicine under the legislation proposed by H.R. 3286 and the companion bills would be a recipient of funding for animal health research. It would be our intention to utilize such support for further cooperative studies with the Illinois Agricultural Experiment Station and the North Central Regional Cooperative Research programs so that full advantage would be taken of existing expertise and organizational structure in finding solutions to animal health problems. This college currently functions in such a structure and participates in the current research information system (CRIS) of the USDA research agencies. It is our view that continued cooperative efforts with agricultural research agencies in the state and nation as a whole represent the best and most effective way of attacking the serious animal disease problems affecting the welfare of the nation and causing loss to livestock producers.

We hope that this Subcommittee and the House Agricultural Committee will see fit to support legislation such as H.R. 3286 and other similar bills.

Sincerely,

L. MEYER JONES,
Dean.

Mr. MELCHER. I have the honor and privilege of having two of my former instructors at Iowa State University Veterinary College, present in this room. Dr. Jones, whom this committee has just seen taught me pharmacology. Seated, I believe, to your right and back a couple of seats is Dr. Baker.

Dr. Baker, I would like you to stand so they can see what a clean-living veterinarian continues to look like. He taught me small animal surgery.

Mr. FINDLEY. Will the gentleman yield?

Mr. MELCHER. Yes.

Mr. FINDLEY. I am glad the Chair recognizes the presence of Dean Meyer Jones. We certainly have had an impressive list of scholars in the veterinary medicine field here and I would hate to have anyone leave the room with the impression that the University of Illinois is not in that category. And Dr. Jones did present to the committee a statement in which he strongly endorsed the bill that is now pending.

Mr. THONE. Mr. Chairman?

Mr. RARICK. Just 1 minute, Mr. Thone.

Are there any other representatives from any other universities present who have not testified?

Mr. TWIEHAUS. I believe the dean from Pennsylvania is here.

Mr. RARICK. Sir, would you please stand and identify yourself?

Mr. MARSHAK. My name is Robert Marshak and I am dean of the Veterinary School at the University of Pennsylvania, one of the schools that isn't covered under the Hatch Act.

Mr. TWIEHAUS. Dean?

Mr. ADAMS. I am Gene Adams, associate dean, Tuskegee Institute, and I have submitted a statement.

Mr. TWIEHAUS. Mr. Popensiek?

Mr. POPENSIEK. I am George Popensiek, dean of the Veterinary College at Cornell University, New York State.

Mr. TWIEHAUS. Mr. Nelson?

Mr. NELSON. I am Nelson King, associate dean, Auburn University, School of Veterinary Medicine and we have submitted a statement.

Mr. TWIEHAUS. Dean Weide?

Mr. WEIDE. Ken Keide, dean, Missouri University. We have submitted a statement.

Mr. TWIEHAUS. Dean Smith?

Mr. SMITH. Roger Smith, dean, Ohio State University, College of Veterinary Medicine and we have submitted a statement, too.

Mr. TWIEHAUS. Mr. Brook?

Mr. BROOK. William Brook, dean of Oklahoma State University.

Mr. TWIEHAUS. Dean Shelton?

Mr. SHELTON. George Shelton, dean of College of Veterinary Medicine, Texas A. & M. University.

Mr. TWIEHAUS. Dean Hooper?

Mr. HOOPER. Bill Hooper, associate dean, Purdue University. We have submitted a statement also.

Mr. TWIEHAUS. Dean Luioto?

Mr. LUIOTO. L. Luioto, associate dean, and we have submitted a statement for the record.

Mr. TWIEHAUS. Bill Armstead is here and Professor Groth from Auburn University is here.

Mr. FOLEY. Mr. Chairman, I think that the record will show, not only the witnesses who have testified formally, but those who represent major institutions of veterinary sciences and medicines and who have submitted statements and who are in the hearing room right now are, perhaps, in my experience, and I am not long in the Congress, the most distinguished group of academic and professional leaders in veterinary medicine and health and science that this subcommittee has been privileged to bring together for testimony on legislation. I think we are all very grateful for the strong show of interest that this participation represents.

Mr. RARICK. I think we are also appreciative for their presence this morning, Mr. Chairman.

Now, I recognize the gentleman from Nebraska, Congressman Thone.

Mr. THONE. I will start with you, Dr. Twiehaus. Maybe you and some of your colleagues could join in on this question of the matching funds aspects of this bill. By the way, I am the sponsor of a similar bill similar to yours, Congressman Melcher. I am interested in Dr. Clarkson's suggestion that if there were such a provision that it probably should exclude the first \$100,000 or so. Supposing this was done? Do you see anything wrong with the matching fund concept that we have already had pretty much in this general area?

Dr. TWIEHAUS. No, I don't. I think we should be given a little time to get ourselves geared to this because, after all, we have a Governor and our legislators to convince of this and this is going to take a little time to get this job done, but I think that the initial money should be exempt from matching money to get us started on this.

Mr. THONE. Do you think you would have any problem in Nebraska in getting matching funds from the State legislature on a program like this?

Dr. TWIEHAUS. It would take a little effort but it could be done.

Mr. EWING. Speaking for Minnesota, I am confident that we could do it.

Mr. TROTTER. They seem to always like to match it with the Federal Government if it is available.

Mr. THONE. I think that is a good point. It is important that you have State commitment. I think it helps the program. Am I wrong on this?

Dr. TWIEHAUS. No.

Mr. THONE.. That is all, Mr. Chairman.

Mr. FOLEY. I don't have additional questions except to comment that there seems to me to be a very large degree of consensus on the part of the professionals and the academic community that this legislation is well conceived and much needed, and I think we could explore the question in great detail but it would just perhaps reemphasize that consensus. The record so far does show that and I hope that we on the committee will be able to persuade the administration and our colleagues that a very good opportunity exists to make important strides in animal health.

Mr. Chairman, before the committee adjourns I would like to say this: First, are there some additional questions?

Mr. RARICK. Are there other questions?

Mr. FOLEY. I think it should be noted that the committee has scheduled a meeting tomorrow morning at 10 a.m.

Mr. RARICK. I think we also should note that as a member of this subcommittee, the only veterinary medical practitioner in the Congress, Congressman John Melcher is the principal author of the legislation before us. So, in case any of our witnesses this morning were not aware of this, Dr. Melcher, you are what? A graduate of the University of Iowa?

Mr. MELCHER. Iowa State University and as a veterinarian, of course, it is appropriate that I serve on this subcommittee.

Mr. FOLEY. Off the record.

[Discussion off the record.]

Mr. RARICK. Well, I would like, on behalf of the members of the subcommittee to extend our sincere thanks to each and everyone who has testified this morning and for those present this morning. I think it is a great privilege to your profession as well as ours that so many of you were able to be present during these hearings.

I am especially grateful that you were able to hear the Department's witness so you can understand firsthand the problems that we face.

I might add that I am a cosponsor of Dr. Melcher's legislation, and I intend to support the head of my college of veterinary medicine and the legislation.

Without further ado, the committee will stand in recess until 10 in the morning when we will resume additional hearings.

[Whereupon, at 12 noon the subcommittee recessed to reconvene at 10 a.m., Wednesday, November 14, 1973.]

ANIMAL HEALTH RESEARCH

WEDNESDAY, NOVEMBER 14, 1973

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON LIVESTOCK AND GRAINS
OF THE COMMITTEE ON AGRICULTURE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:10 a.m., in room 1302, Longworth House Office Building, Hon. John Melcher [acting chairman] presiding.

Present: Representatives Melcher, Jones of North Carolina, Sisk, Rarick, Bergland, Denholm, Litton, Gunter, Mayne, Zwach, Sebelius, Thone, Symms, and Johnson.

Also present: Hyde H. Murray, associate counsel.

Mr. MELCHER. The Subcommittee on Livestock and Grains will come to order this morning.

Chairman Foley is having a little bout with the flu this morning and will not be with us, and so I am presiding in his absence.

We are continuing this morning the hearings on H.R. 3286, the Animal Health Research Act, and similar bills. We have a series of seven witnesses to appear today. The procedure of this subcommittee and the procedure of the full committee is to hear the witnesses first and then ask in each case that the witness stand by ready to answer questions after we have concluded the formal testimony of each witness.

And so with that understanding, the subcommittee will now hear from Hon. George A. Smathers, general counsel, American Horse Council, Washington, D.C., and he is accompanied by Dr. Maurer, associate dean of the College of Veterinary Medicine, Texas A. & M. University, an outstanding authority; and Mr. Henry Durham, executive vice president of the American Horse Council.

Senator, Doctor, and Mr. Durham, we are pleased to have you with us this morning.

**STATEMENT OF HON. GEORGE A. SMATHERS, GENERAL COUNSEL,
AMERICAN HORSE COUNCIL, WASHINGTON, D.C., ACCOMPANIED
BY DR. FRED MAURER, ASSOCIATE DEAN, COLLEGE OF VETERI-
NARY MEDICINE, TEXAS A. & M. UNIVERSITY, TEXAS, AND
HENRY DURHAM, EXECUTIVE VICE PRESIDENT, AMERICAN
HORSE COUNCIL, WASHINGTON, D.C.**

Mr. SMATHERS. Thank you very much, Mr. Chairman and members of the subcommittee.

May I first express our appreciation for allowing us to appear at these hearings on behalf of the American Horse Council. I am testify-

ing today as general counsel. With me are Dr. Fred Maurer, associate dean, College of Veterinary Medicine, Texas A & M University and Mr. Henry Durham, executive vice president and assistant general counsel of the American Horse Council. I might add that Dr. Maurer also represents the U.S. Department of Agriculture Horse Industry Advisory Committee, on which he serves as chairman of the research work group.

I would like to begin by giving you some information about the organization we represent. The American Horse Council was organized in 1969 as a national trade association to promote the interests of the rapidly developing equine industry.

We represent a membership of approximately 1½ million American horsemen. Our members represent a cross-section of America, including vast numbers of working people of moderate means. Among our 59 organizations, which include every equine organization in the country, are 20 breed registries and breeders associations, 22 racing associations, and 17 trade associations, commercial organizations and activity groups. While American horsemen are primarily represented through these 59 groups, council membership is open to both professional and pleasure horsemen as individuals.

The National Horse and Pony Youth Activities Council is our youth educational affiliate, which was established to help coordinate and unify various equine youth programs throughout the country. It has a membership of more than 500,000 young people, including 296,000 boys and girls who are engaged in 4-H horse projects.

It is interesting to note that horses are the most popular of the 4-H animal projects. In fact, more youngsters are engaged in 4-H horse programs than in both beef and swine projects, which are the second and third most popular animal projects. Approximately 25,000 additional youngsters take up horse projects each year.

The principal purpose of the council is to protect and promote all aspects of the equine industry. Our presence here today, in support of H.R. 3286, the Animal Health Research Act, is pursuant to our continuing effort to encourage scientific research in equine veterinary and animal diseases.

I would like to give you some idea of the extent of the horse industry in America today and briefly. No official census of the U.S. horse population is available, but studies indicate there are now 8 million horses in this country. This is more than double the number recorded in the 1960 census of the Agriculture Department.

In 1969, an independent study indicated that the combined investment and annual expenditures of the horse industry amounted to \$12 billion. Based on the growth of the industry over the past 4 years, the combination of investment and expenditures now exceeds \$13 billion a year. Based on U.S. Department of Agriculture figures, it is estimated that horseowners spend nearly \$6 billion annually on feed, equipment, drugs, services, and similar items. The animals themselves are valued at roughly \$5 billion.

Horseracing alone makes a substantial contribution to our economy and to the tax base of those 31 States which permit parimutuel betting. In 1972, horseracing produced more than \$500 million in parimutuel revenue to those 31 States. This was in addition to State income taxes, sales taxes, property taxes, and other revenue.

The Federal Government also benefits from the income taxes paid by the racetracks, income taxes paid by owners and breeders, and income taxes on the wages of the thousands of equine industry employees. Although data is limited, it is estimated that the racetracks alone are now paying Federal income taxes in excess of \$25 million annually.

The American Horse Council notes with approval, and also with relief, that horses are specifically mentioned to be beneficiaries of any funds eventually appropriated under authority of H.R. 3286. We use the word "relief" because for too long a time horses have been the poor stepchildren of the American livestock industry.

I would like to point out that this multibillion-dollar horse industry, as such, does not enjoy any price supports or subsidies from the Federal Government. Yet the horseowner and breeder like every other farmer in America has borne the brunt of skyrocketing costs. One of these costs is his annual losses from horse diseases and from problems of nutrition and reproduction.

It is estimated that the annual losses from horse diseases is approximately \$750 million. Yet less than \$1 million is now being expended each year on the research of horse diseases. It follows that we are spending only \$1 per year for research to prevent each \$750 of current loss. This research-loss ratio of \$1 to \$750 is totally inadequate. With increased research, these losses could be reduced.

Putting it another way, it is generally accepted that there is an animal loss from disease in any breed of animals approximately 10 to 15 percent of the total value of that livestock population. With a total horse population in the United States valued at \$5 billion, and \$10 billion presently being spent in horse medical research by government and private agencies, the ratio of the value of horses to the amount spent in horse medical research is far less than one-tenth of 1 percent of the losses each year.

It is not only the rapid growth in numbers of horses that has intensified the need for medical research, but the problem is further complicated and the danger is increased by the extensive movement of horses nationally and internationally. In this connection, and particularly in light of the Nation's balance of payments problem, it is interesting to note that last year horse exports amounted to over \$19 million, and exceed imports by more than \$8 million.

The funds which have been made available for equine research have had some beneficial results. Major breakthroughs in equine medical research have occurred recently in two areas: in control of Venezuelan equine encephalomyelitis, which we call VEE, and in diagnosing equine infectious anemia, which we call EIA.

Following the American Horse Council's warning of the approach of VEE through Mexico in 1971, USDA undertook a crash program to control the disease through immunization. The vaccine, which was called TC-83, which was developed by the Department of Defense, was tested by USDA and found to be safe and effective. There were no cases of VEE confirmed in the United States either in 1972 or 1973.

In regard to EIA, Dr. Leroy Coggins, at Cornell University, was responsible for a breakthrough in diagnosing EIA. He perfected procedures for making the Agar-Gel Immunodiffusion test applicable to equines. This was a great gain for the horse industry since the disease

is communicable and it is often difficult to determine if an animal is a carrier and could spread the disease within its own herd. There are numerous other examples of highly contagious diseases which caused great destruction prior to the research which led to immunological control. Such diseases as western equine encephalomyelitis, eastern equine encephalomyelitis, African horse sickness, and anthrax are a few of many possible examples.

The U.S. Department of Agriculture Horse Industry Advisory Committee met in Washington, D.C. in May of this year and presented its recommendations to the Secretary of Agriculture, regarding the industry's needs. Dr. Fred Maurer, who is with us today, is chairman of the committee's research work group which drafted a priority research plan, which was approved by the full committee and presented, along with other proposals, to the Secretary of Agriculture. The full document is entitled "Recommendations Relative to the Needs of the Horse Industry."

The committee formally endorsed the "Animal Health Research Act" and requested that the list of equine research priorities it developed be used as a blueprint for long range priority research planning.

The composite list of equine research priorities, with separate lists for health research and animal science research priorities, developed by the House Industry Advisory Committee, is contained in our written statement which we request, Mr. Chairman, with your permission, be made a part of the record.

Mr. MELCHER. Without objection, the report will be made a part of the record at this point.

Hearing no objection, so ordered.

[The information referred to follows:]

AMERICAN HORSE COUNCIL, INC.,
Washington, D.C.

Following is a summary of the American Horse Council's statement concerning the proposed Animal Health Research Act (H.R. 3286).

1. The American Horse Council, Inc., a national trade association representing one and one-half million American horsemen, supports the concept of the Animal Health Research Act and urges its speedy approval by the Congress.

2. The Council takes particular note that—among the bill's other purposes—this legislation seeks "to improve the health of companion animals which support an industry of major economic importance and which contribute significantly to the quality of family life." Such language describes the domestic equine industry, and we commend the sponsors of this legislation for including horses under the terms of the bill.

3. Although the U.S. equine industry has experienced phenomenal growth in the past decade—now representing an investment of some \$13 billion—horses have, for too long a time, been the poor stepchildren of the American livestock industry.

4. Considering the impressive growth of our industry, governmental support for equine studies is still very limited in comparison to the industry's needs, and in comparison to support for other livestock research. Analysis of Federal funding for equine research has revealed that less than three percent of Federal money for animal studies is spent on horses.

5. At present, there are no accurate official figures regarding the horse population and the economics of the industry, as there are regarding the numbers and value of other livestock and poultry. The Council believes that enumeration and evaluation studies are of priority importance among the industry's research needs.

6. The American Horse Council supports the priority research recommendations made by the U.S. Department of Agriculture Horse Industry Advisory Committee. These recommendations are contained in the Committee's proposal document, "Recommendations Relative to the Needs of the Horse Industry", presented to the Secretary of Agriculture at the Committee's May 1973 meeting.

We strongly urge that these priorities be followed in planning future equine research.

7. The Council also supports the concept of continuous type funding for animal research projects, which is one of the underlying objectives of H.R. 3286. We urge funding commitments of up to four or five years in the belief that this is necessary, not only to attract qualified specialists, but to maximize the prospects of eventual success in the research.

STATEMENT OF THE AMERICAN HORSE COUNCIL, INC., BEFORE THE LIVESTOCK AND GRAINS SUBCOMMITTEE, COMMITTEE ON AGRICULTURE, U.S. HOUSE OF REPRESENTATIVES, WASHINGTON, D.C.

INTRODUCTION

The American Horse Council, Inc., a national trade association representing some one and one-half million American horsemen, submits this formal statement in support of the Animal Health Research Act. The Council's offices are located at 1776 K Street, N.W., Washington, D.C. 20006.

The American Horse Council's membership represents a cross section of America, including vast numbers of working people of moderate means who have joined together in the common goal of promoting the rapidly developing U.S. equine industry.

We note in the language of H.R. 3286 that one of the purposes of the bill is "to improve the health of companion animals which support an industry of major economic importance and which contribute significantly to the quality of family life." Such language seems tailored to fit a description of the United States equine industry.

Following the introduction of the automobile and the mechanization of agriculture, the horse suffered a sabbatical. For a half century he was no longer needed for the world's chores and, quite frankly, he became associated with the rich who kept him as an expensive hobby.

This is no longer true. Horses are now the backbone of an "industry of major economic importance" and they are, as well, companion animals "which contribute significantly to the quality of family life."

The "pleasure horse" segment of the industry—referring to families which keep one or two horses for recreational purposes—is one of the most rapidly developing aspects of the equine industry.

WHAT IS THE AMERICAN HORSE COUNCIL?

The American Horse Council was formed in 1969, approximately a decade after the horse had begun to emerge from the eclipse caused by mechanization and industrialization. Four major breed associations joined together at that time to found the Council. They were: the American Quarter Horse Association, the American Saddle Horse Breeders Association, the Jockey Club, and the United States Trotting Association.

Prior to 1969, numerous equine associations worked separately to meet the needs of their respective memberships, but they were limited by their nature and found it difficult to unite quickly against threats to the industry as a whole.

Today 58 other organizations have joined with the initial four in membership in the American Horse Council, making a total of 62 member organizations.

These 62 organizations are:

- American Association of Equine Practitioners.
- American Hackney Horse Society.
- American Horse Publications.
- American Horse Shows Association.
- American Morgan Horse Association.
- American Paint Horse Association.
- American Quarter Horse Association.
- American Saddle Horse Breeders Association.
- American Trainers Association.
- Aqueduct.
- Appaloosa Horse Club, Inc.
- Arabian Horse Registry of America.
- Arizona Downs.
- Atlantic City Racing Association.

Belmont Park.
 California Thoroughbred Breeders Association.
 Centennial Turf Club Inc.
 Churchill Downs Inc.
 Continental Thoroughbred Racing Association.
 Delaware Racing Association.
 Detroit Racing Association.
 Eagle Downs Racing Association.
 Florida Thoroughbred Breeders Association.
 Gilman Paper Company.
 Grayson Foundation.
 Hialeah Park Inc.
 Hollywood Turf Club.
 Horsemen's Benevolent and Protective Association.
 International Arabian Horse Association.
 The Jockey Club.
 Jockey's Guild.
 Keeneland Association.
 Los Alamitos Race Course.
 Los Angeles Turf Club.
 L. H. Marten Ltd.
 Maryland Horse Breeders Association.
 Monmouth Park Jockey Club.
 Morris Animal Foundation.
 National Association of State Racing Commissioners.
 National Horse and Pony Youth Activities Council.
 National Steeplechase and Hunt Association.
 New Hampshire Jockey Club.
 Oak Tree Racing Association.
 Pacific Racing Association.
 Pinto Horse Association of America.
 Pompano Park.
 Rodeo Cowboys Association.
 Saratoga.
 Standardbred Breeders Association.
 Harry M. Stevens, Inc.
 Sullivan County Harness Racing Association.
 Tanforan Racing Association.
 Tennessee Walking Horse Breeders Association.
 Thoroughbred Breeders of Kentucky, Inc.
 Thoroughbred Club of America.
 Thoroughbred Owners and Breeders Association.
 United Professional Horsemen's Association.
 United States Trotting Association.
 Virginia Thoroughbred Association.
 Washington Jockey Club.
 Western Standardbred Association.
 Wolverine Harness Raceway Inc.

Among these member organizations are breed registries, breeders associations, racing associations, commercial organizations, and activity groups.

While American horsemen are primarily represented in the American Horse Council through these 62 organizations, AHC membership is open to both professional and pleasure horsemen as individuals.

The principal purpose of the Council is to protect and promote all segments of the equine industry. As part of its job, the Council encourages scientific research in equine veterinary and animal sciences.

It monitors the incidence of equine disease and solicits public and private assistance when there is reason to believe that a particular disease poses a threat to the nation's horse population. This was the case in 1971 when the Council and its members warned of the approach of Venezuelan equine encephalomyelitis.

The AHC participates in educational programs for horsemen. It studies industry problems and distributes research results to organizational and individual members and, when requested, to members of Congress.

In short, the American Horse Council serves the entire horse industry, and its policies are limited only to what is relevant to the horse industry on a national basis.

HOW LARGE IS THE DOMESTIC EQUINE INDUSTRY?

No official census of the U.S. horse population is available, but industry studies reflect that there are now eight million horses in this country, more than double the number recorded in the 1960 Census of Agriculture.

In 1969, an independent study indicated that the combined investment and annual expenditures of the horse industry amounted to \$12 billion. The combination of investment and expenditures now probably exceeds \$13 billion. Based on U.S. Department of Agriculture figures, it is estimated that horse owners spend nearly \$6 billion annually on feed, equipment, drugs, services, and similar items. The animals themselves are valued at roughly \$5 billion.

Horses are the most popular of the 4-H animal programs, attracting more than 296,000 youngsters per year. In fact, more boys and girls are engaged in 4-H horse projects than in beef and swine projects combined, which rank second and third respectively. Approximately 25,000 additional youngsters take up horse projects each year.

Horse events drew about 85 million fans in 1971. Last year horse racing alone produced more than one-half billion dollars in pari-mutual revenue to those 31 states which permit wagering, in addition to state income taxes, sales taxes, property taxes, and other revenue.

The Federal government also benefits from the taxes paid by the racetracks, taxes paid by owners and breeders, and taxes on the wages of the thousands of equine industry employees. Although data is limited, it is estimated that the racetracks pay Federal income taxes in excess of \$25 million annually.

In light of the nation's balance of payments problem, it is interesting to note that last year horse exports amounted to over \$19 million and exceeded imports by more than \$8 million.

To further illustrate the phenomenal growth of the equine industry in recent years, we point out that horsemen in at least 23 states have formed state horse councils. These organizations are similar in composition and purpose to the American Horse Council in that they are made up of representatives from various equine groups within the state and they represent the interests of all horsemen in their particular states in dealing with legislation and local matters affecting their interests.

EQUINE MEDICAL RESEARCH IN THE TWENTIETH CENTURY

When Dr. William R. McGee, D.V.M., past president of the American Association of Equine Practitioners and a director of the Grayson Foundation, testified before a Senate Appropriations subcommittee in 1970 regarding USDA funds for equine research, he gave some interesting background on equine research in the 20th Century:

In the entire country 30 years ago, I would guess that there were less than a dozen practitioners in most instances, with no access to research facilities. There were no funds for equine research, inasmuch as research in this field has lain dormant since about 1918 to around 1940; there was no interest, no incentive for research personnel to pursue it, and consequently no trained personnel to pursue it, and consequently no trained personnel for any tests that we might find for them.

Twenty years ago, the situation had changed somewhat in that the population was increasing and, of course, with the increase in the population, the problems were increasing. Still there were no real research facilities—that is, physical plants—set up to handle equine research; there were no trained personnel; there were research people but they were not familiar with equine problems and they did not have the equipment, the laboratory space, nor the funds to do any research work; and it was about this time that private research began to exert what I can best describe as a defensive effort.

We had these problems, nobody was in a position to help us much with them, and owners and private organizations did get a little money together, and at that time it was very difficult to find a place to use what little money we had. Personnel was not there, the physical plant was not there, and certainly we had neither money nor time to build or to train personnel.

So the effort was kind of a fire-fighting tactic. . . .

About 10 years ago, with a greatly increased interest in pleasure horses and 4-H youth horse work . . . the veterinary colleges and the commercial suppliers began to look ahead and realize what a future the equine industry had. Prior

to that time it was considered a hobby or a sport or something like that. It was about this time that it began to take on the aspects of an industry.

Consequently, the veterinary colleges began to incorporate more equine medicine and surgery in the program. We began getting graduates from schools that wanted to go into equine practice and were equipped to do it and also into equine research.

The colleges initiated training of research personnel for specialized problems. There began to be some funding through the State experimental stations and the universities for certain very limited problems. But still nothing in the way of continuing research.

That brings us up to 1970 and, as you have heard, the American Horse Council. I think the Council is the first noteworthy effort to organize all of the industry and find out exactly what we were, what sort of animal we actually were, and it really surprised most of us that have been around half a century to know that this was truly big industry. It also surprised most people, although some of us knew, how little research had been done and what a gap there was to cover if we were going to catch up even to the ratio that most industries program for their research.

This is very far in the future, I am sure, but it is, I think, very pertinent that we recognize the equine industry as an industry and not as a hobby or sport or the like.

We now have very capable, wonderful facilities, well equipped with the latest equipment, good personnel that are eager to go, and no money.

In the three years since Dr. McGee's testimony there have been some changes. The Federal government is now funding more equine research—although still a very limited scale in comparison to the need—and various state governments are also involved in these efforts.

PRIVATE FUNDING OF EQUINE MEDICAL RESEARCH

Several private foundations, such as the Grayson Foundation, of Lexington, Kentucky, and the Morris Animal Foundation, of Denver, Colorado, exist for the purpose of funding animal health research. Industry groups, including the American Quarter Horse Association, of Amarillo, Texas; Harness Tracks of America, in Chicago, Illinois; and the U.S. Trotting Association of Columbus, Ohio, have also provided money for equine research. The financial support for these activities—particularly in the case of the foundations—comes, of course, from private individuals.

In recent years, annual levels of equine research funded from private sources have been approximately \$350,000.

JUSTIFICATIONS FOR RESEARCH IN EQUINE MEDICINE

Comparing the percentage of annual loss to the horse industry from disease with expenditures for equine disease research indicates that funds for research to protect the horse industry are grossly inadequate and far less than is spent for research and development to protect other U.S. industries.

The annual loss from equine diseases is estimated at 15 to 20 percent by the Terry Report of the National Academy of Sciences. Fifteen percent of the \$5 billion value of U.S. horses is a loss of \$750 million per year.

As Dr. Fred Maurer, Associate Dean of the College of Veterinary Medicine at Texas A & M University, and Chairman of the U.S. Department of Agriculture's Horse Industry Advisory Committee research work group, has pointed out: only about three percent—or \$1,000,000—of those funds available to USDA for livestock health research is expended on equine health problems.

It follows that the U.S. is spending only \$1 per year for research to prevent each \$750 of current loss. As compared with the \$5 billion total value of U.S. horses, an annual expenditure of \$1,000,000 for research to protect them is only \$1 per \$5,000 of value.

At the same time many owners pay about 6 percent annually of the value of the horse for life insurance.

The Agricultural Research Service (ARS) is directed to spend most of this \$1,000,000 on Venezuelan equine encephalomyelitis, equine infectious anemia, equine piroplasmiasis, and african horse sickness. The Cooperative State Research Service of USDA utilized some \$100,000 for grants channeled through the fifty state Agriculture Research Stations. While the programs supported are neces-

sary, it is obvious that there are many other acute equine disease problems which cannot be funded and many competent research veterinarians who cannot get support to work on equine experiments.

Equine medical research is a very profitable investment. For example, the U.S. horse industry can largely thank its present existence to the TC 83-vaccine against Venezuelan equine encephalomyelitis which so very dramatically stopped the spread of that highly fatal disease through the U.S. in 1971. Venezuelan equine encephalomyelitis had moved up from South America where for decades it had swept across large areas of Venezuela, Colombia, Ecuador and Peru killing hundreds of thousands of equine animals and causing untold human disease. There the U.S. stood in June of 1971 with a fully susceptible horse population and an abundance of mosquitoes to serve as vectors, being invaded by a disease with a track record of killing in excess of 50% of exposed horses. The disease moved rapidly into Texas killing some 1,600 horses but fortunately research had made available a vaccine which stopped the outbreak well within the state of Texas. Following the immunization of the majority of horses in the states the disease has been held in check with no cases in either 1972 or 1973.

There are numerous other examples of highly contagious diseases which caused great destruction prior to the research which led to immunological control. Such diseases as Eastern and Western equine encephalomyelitis, African horse sickness, and anthrax are a few of many possible examples.

Research has contributed so much to the fund of knowledge which has made the modern horse industry possible that there is no doubt about the wisdom in investing in research for further development.

Improved animal health means more efficient production, improved human health, greater financial stability for the equine industry and increased recreational possibilities for families.

MORE EQUINE RESEARCH NEEDED

In comparison to the need, we have not yet begun to scratch the surface in finding out about diseases of the horse, animal husbandry problems, or even about the importance of the horse in general.

This point can best be understood by studying the language of H.R. 3286. There is a formula approach embodied in the bill in Section 4(b)2 which decrees that "Forty-eight per centum shall be distributed to eligible institutions in the proportion that the value of domestic livestock in each state where such institution is located, bears to the total value of domestic livestock and poultry in the United States according to the latest published United States Department of Agriculture statistics. The Secretary will determine the total value and the proportionate value of domestic livestock and poultry for each State with guidance of the Advisory Board from the latest inventory of all cattle, sheep, swine, horses, and poultry published by the United States Department of Agriculture."

The problem here is that there are no accurate official figures regarding the horse population as there are regarding the numbers and value of other livestock and poultry.

The Census of Agriculture taken in 1969 recorded 2.2 million horses on the nation's farms. Of course, this figure does not include all horses in the urban and suburban areas of the United States and to take that figure as reflecting the U.S. horse population would be totally unrealistic.

In fact, the Department of Agriculture actually vaccinated a total of 2,843,000 horses in 19 states during the VEE epidemic. As a result of their experience during the VEE outbreak, the USDA Animal Health staff estimated that there were 6.2 million horses in the country compared to industry studies reflecting a U.S. horse population of eight million in 1973.

But the important point is that since no one really knows what the domestic horse population is, there can be no accurate evaluation of the dollar value of horses for the purposes stated in H.R. 3286. The Council believes enumeration and evaluation to be one of the most pressing problems confronting the industry. We have discussed the problem at length with USDA representatives and the National Association of State Departments of Agriculture with the objective of reaching a joint commitment to pursue a national equine enumeration. The Federal government must have this information in order to substantiate allocations for equine research at levels proportionate to other livestock, to enable Federal and state governments and Extension Service workers to plan more efficiently, as well as to satisfy the formula approach of H.R. 3286.

WHAT ARE THE EQUINE INDUSTRY'S PRESENT RESEARCH PRIORITIES?

In 1971, the American Horse Council published its "Recommended Research Plan." This document and much of the material developed by the Council was used as the basis of the U.S. Department of Agriculture Horse Industry Advisory Committee's (HIAC) recommendations for equine research.

The Committee, composed of 31 horse industry leaders, was appointed by the Secretary of Agriculture to make recommendations to him regarding the industry's needs. The American Horse Council was instrumental in having the Committee established, and HIAC has been fortunate to have the interest and valuable assistance of USDA Under Secretary, J. Phil Campbell, as the Committee's Chairman.

At its May, 1973, meeting here in Washington, D.C., the organization's Research Work Group drafted a priority research plan, based on AHC's 1971 proposals, which was approved by the full Committee and presented, along with other proposals to the Secretary of Agriculture. The full document is entitled, "Recommendations Relative to the Needs of the Horse Industry."

The Committee formally endorsed the "Animal Health Research Act" and requested that the list of equine research priorities it developed be used as a blueprint for long range research planning.

A composite list of equine research priorities, with separate lists for health research and animal science research priorities, developed by the Horse Industry Advisory Committee, follows:

COMPOSITE PRIORITY GROUPINGS FOR EQUINE RESEARCH

Priority categories:

1. Venezuelan equine encephalomyelitis—Ongoing.
1. Equine infectious anemia—Ongoing.
1. Equine piroplasmosis—Ongoing.
1. African horse sickness—Ongoing.
1. Equine respiratory disease.
2. Equine reproduction.
2. Therapeutics.
2. Equine management, housing, and waste.
2. Equine nutrition.
3. Horse identification.
3. Equine economics.
3. Equine parasites.
4. Behavior and training.
4. Lameness.
4. Genetics and breeding.

EQUINE HEALTH RESEARCH PRIORITIES

1. Equine respiratory diseases.
 - Equine influenza.
 - Equine rhinopneumonitis.
 - Equine viral arteritis.
 - Streptococcal infections (strangles).
1. Venezuelan equine encephalomyelitis—Ongoing.
1. Equine infectious anemia—Ongoing.
1. Equine piroplasmosis—Ongoing.
1. African horse sickness—Ongoing.
2. Equine reproduction.
2. Therapeutics.
3. Equine nutrition.
3. Equine parasites.
3. Lameness, unsoundness, and bone disease.

EQUINE ANIMAL SCIENCE PRIORITIES

1. Equine reproduction.
1. Equine nutrition.
1. Equine management, housing, and waste.
2. Behavior and training.
2. Genetics and breeding.
3. Horse identification.
3. Economics.

The American Horse Council supports the priorities endorsed by the U.S. Department of Agriculture Horse Industry Advisory Committee and strongly urges that they be followed in planning future equine research programs.

NEED FOR LONGER RESEARCH FUNDING COMMITMENTS

One final point which the American Horse Council wishes to make is that it supports the concept of continuous type funding, which is one of the underlying objectives of H.R. 3286. Research personnel are a very valuable asset to this country. We are most fortunate to have scientific talent of such high caliber at our colleges of veterinary medicine and state agricultural experiment stations.

But many of them are understandably hesitant to undertake research projects on short term commitments. Research, as the Subcommittee is well aware, is often a time-consuming process. The Council endorses this effort to provide funding commitments of up to four or five years. We believe this is necessary, not only to attract qualified specialists, but to maximize the prospects of eventual success in the research.

* * * * *

The American Horse Council supports the concept of the "Animal Health Research Act", and urges its speedy approval by the Congress.

Mr. SMATHERS. The American Horse Council supports the priorities endorsed by the U.S. Department of Agriculture Horse Industry Advisory Committee and strongly urges that they be followed in planning future equine research programs.

Research has contributed so much to the fund of knowledge which has made the modern horse industry possible that there is no doubt about the wisdom of investing in research for further development.

Improved animal health means more efficient production, more abundant food resources, improved human health, and greater financial stability for livestock and poultry industries.

It is for these reasons that the American Horse Council supports the concept of the Animal Health Research Act and urges its speedy approval by this committee and by Congress.

Thank you, Mr. Chairman. That is the conclusion of my statement.

Dr. Maurer has a statement which he would like to make.

Mr. MELCHER. Yes. We would like to hear from you now, Doctor.

STATEMENT OF DR. FRED MAURER, ASSOCIATE DEAN, COLLEGE OF VETERINARY MEDICINE, TEXAS A. & M. UNIVERSITY

Dr. MAURER. Thank you.

Senator Smathers has made a comment on the importance of the horse industry to the social and economic welfare of the United States. It is obviously a \$15 billion industry which provides some half a billion dollars of tax industry. It provides employment to some 200,000 people, and pleasure for many millions. It is worthy of the minimal amount of research support it takes to make it a viable and economically sufficient industry.

Equine research has lagged for many years behind other types of medical research for animals and for other species of livestock and for man. The fund of knowledge for medical science in any field is largely dependent upon research. This lag in funds for the horse is largely due to the fact that because of the decline of the horse as an important animal for agricultural power, funds for research were discontinued. It follows for the last 30 to 40 years, there has been precious little money devoted to the health of the horse, and as a result of this, today equine practitioners are often faced with equine health

problems for which there are no answers, no answers because research is yet to be done.

Research could provide solutions to these problems if it were an adequate amount and of sufficient duration. That research is a good investment, that it will pay off is evidenced by the availability of the TC-83 vaccine which stopped the VEE outbreak. That was a disease situation that would have wiped out the horse industry if research had not been done to provide the vaccine.

The Agriculture Research Service of the U.S. Department of Agriculture is able to provide money for only four major diseases. They are doing some surveillance work on VEE, and they are working on the equine infectious anemia, equine prioplasmosis, and African horse sickness, and that is all. There is a host of other problems for which research is lacking, and while the experiment stations in veterinary schools do some research on equine medicine through funds developed from the Hatch Act, there is a pitifully small amount that is made available for equine research.

In 1972, for example, there was some \$94 million appropriated for the Hatch Act, with only \$154,000 available for equine health research, and when you spread \$154,000 over some 50 State experiment stations and 18 veterinary schools, it does not do much for the solution of any one problem in any one place.

One reason for this gross deficiency in research funds is that the percentage of research and development funds in the whole United States devoted to agriculture has decreased markedly in recent years.

In 1940, for example, 40 percent of U.S. research and development funds were devoted to agriculture. In 1973 it was 1.8 percent, a drastic reduction in the amount of funds available for livestock research. It simply follows that the Department of Agriculture does not have the money required to provide research support for the livestock industry that it needs to make it a viable and effective one.

In 1972 the total income from livestock in the United States was some \$35 billion, and \$25 billion for all crops, and that \$25 billion for crops would have been greatly reduced if there had not been a market provided by livestock for the forage and much of the grain produced by crops.

Nearly one-half the land of the United States, some billion acres, is only useful for its production, and livestock provides a market for that forage that would not otherwise be available, and the some 8 million horses also play a significant role in the use of that forage and that grain.

Now, although the horse is primarily a companion animal in the United States, there are many millions of people in the world where the horse is still vital for transport and agricultural power, and anything we do here in the way of increasing the tools and the methods for helping improvement in the United States would be helping people around the world who are dependent upon the horse for their food supply and for distribution of food.

So we think the Animal Health Research Act is vital not only to the horse industry but to livestock in this country.

I would if I may, Mr. Chairman, like to make a brief statement about foreign animal diseases as they relate to this act because I feel this is an important area that would not otherwise be discussed.

Mr. MELCHER. Certainly, Dr. Maurer.

Dr. MAURER. It will be a very brief one.

It is quite obvious, I think, that if we had to protect the United States against the invasion and the threat of major foreign animal diseases, we must have more knowledge of those diseases than we now do.

World food production is grossly inadequate, both in quality and in quantity. The population is exceeding the world food supply by some 2 percent per year. The United States is 1 of only 10 countries that had a significant surplus of food in the world today. These 10 countries contain only 15 percent of the world's population. It is pretty obvious that we cannot for long make up the world's deficit, so we must do something in the long run about helping these people to feed themselves.

Now, when all types of food are deficient, certainly proteins and animal proteins are the ones which are in shortest supply and most desperately needed. While it is true that about 70 percent of the world's protein comes from plants and about 30 percent from animal sources, the fact remains that for many people of the world, it is not possible for them to use the plant proteins available. This is true for several reasons. One is it takes knowledge of nutrition to know which plant proteins to utilize. It takes money to process them to a form that they can be utilized by both children and adults, and it takes incentive to utilize them, and so that means that in many parts of the world people are not utilizing the proteins that they might if they had the wherewithal to do it.

So, it means that today it is believed that some two-thirds of the children in the world suffer from malnutrition, primarily protein deficiency, while on the other hand, if a person had a small amount of mineral protein then he could eat any kind of plant food and have an adequate diet; so, animal foods are important in worldwide nutrition.

It is also true that some 35 percent of the world's population is still dependent on animals for agricultural power, transport, fertilizer as well as meat, milk, and eggs, and for many of these people who are also dependent upon animals as a way of life.

There are vast areas of the world where people simply could not live if it were not for the livestock that they utilize in the grazelands in that area.

I spent most of August in West Pakistan in an area where it is so eroded and so barren that a cow cannot exist there, yet they maintain some 7 million goats in this area, at a ratio of 1 goat per 100 acres, but still this provides the food and the way of life for very large numbers of people.

Livestock diseases, particularly exotic ones are not only important in these countries where they are such a burden, but they are also important to all of the undeveloped regions of the world.

It is said in the United States, for example, that the losses from disease in production are roughly 11 percent, but in many countries where there is inadequate veterinary support, the losses run from 30 to 50 percent per year.

Of the diseases which threaten us, we are familiar with recent invasions as VEE, that was mentioned before this morning, cost the United States some \$50 million in 1971; and Asiatic Newcastle which has been prevalent for the last 2 years, particularly in California, cost

some \$26 million in indemnities to pay for birds that had to be destroyed, at a total of about \$60 million, the invasion of this one disease.

Apart from these ones we have mentioned, we have gotten several others that are real threats to us. African swine fever, for example, moved out of Africa into Spain and Portugal in the early 1960's, killed between 3 and 4 million animals in those two countries, essentially wiped out the swine industry. It is a disease for which there is no vaccine. It is one which tends to spread readily, and moved to Cuba in 1971 and the Cubans had to destroy some 400,000 swine to eradicate it, 90 miles from our shore, a disease with no vaccine against it. It has the potential of wiping out the swine industry.

There are others, like African horse sickness. This disease moved into the Middle East in 1961, through 11 nations and many hundred thousands of horses.

If we do not know more about these diseases, we cannot protect ourselves against them.

Lastly, I think this provides evidence that we need more money not only for the research for the problems that we have, but also for the ones that threaten us, and I think the Research Act looks like a way we can get the support that we need.

Thank you very much.

Mr. MELCHER. Thank you very much, Dr. Maurer.

Mr. SMATHERS. Mr. Chairman, that concludes our presentation.

Mr. MELCHER. Thank you very much, Doctor, Senator, Mr. Durham.

If you could stay with us until we have heard from the rest of the witnesses, we would like to have you available for questioning afterwards.

Our next witness is Bill McMillan, executive vice president of the American National Cattlemen's Association.

Bill, we are very pleased to have you before us. Your appearances before this subcommittee and the full committee are always constructive.

Mr. McMILLAN. Thank you very much, Mr. Chairman, members of the subcommittee.

With your permission I would like to submit a written statement for the record and have it appear in its entirety, and then I would like to in the interest of time do a little paraphrasing and perhaps expand a bit on why we feel it is important to enact H.R. 3286.

Mr. MELCHER. Without objection, the entire statement will be made a part of the record at this point.

Hearing no objection, it is so ordered.

[The prepared statement of Mr. McMillan follows:]

STATEMENT OF C. W. McMILLAN, EXECUTIVE VICE PRESIDENT, AMERICAN NATIONAL CATTLEMEN'S ASSOCIATION

The U.S. beef industry represents a major segment of the agricultural economy of the nation. Sale of cattle and calves represents over 25% of all agricultural income in the U.S. The role of beef in the nation's diet is shown by the estimate of 115 pounds per capita consumption of beef in 1972. The number of beef cows necessary to provide the U.S. citizen with this 115 pounds of beef for his diet in 1972 was 38.7 million head and will need to increase as population growth continues.

Rural America depends heavily upon beef production as an important segment of its economic welfare. Many are almost wholly dependent upon the success of

beef production in certain regions. Beef processing and marketing provide thousands of jobs and an additional source of dollars for the economy of every state.

The American public is heavily dependent on the beef industry. Many derive their income from beef production and marketing. Most of the public depends on beef as the primary source of animal protein in their diet. In addition, cattle are a valuable means of productivity on large land areas producing roughage only which along with grain feeding gives us the high quality we consume.

In recent years the beef industry has experienced a great expansion in productivity and efficiency. An important factor in this expansion has been the efforts of the American cattlemen to reduce the enormous loss that occurs from animal diseases. The beef producer, veterinary practitioner, biologic and pharmaceutical industry and scientists at universities and the USDA have all worked together in disease research and control programs to increase productivity and protect the public's health. Brucellosis, tuberculosis, contagious bovine pleuropneumonia, anthrax and many others serve as testimony of the progress from these animal disease programs. Even so, animal disease losses continue to plague the industry with some estimates as much as one billion dollars annually. More and more, compared to prior years, cattle are raised in greater concentrations and are transported frequently, often for greater distances, providing greater opportunities for exposure to disease. Infectious and non-infectious diseases still represent the greatest single hazard to the production of adequate supplies of beef.

The American National Cattlemen's Association has spent the last four years on a nationwide effort to assess the needs of the industry for research by involving every ANCA affiliated state cattlemen's association, state cattle feeders' association and national breed associations throughout the country. This combined with advice from experts in animal health indicates that serious diseases and reproductive problems are still with us. Among those diseases that the beef producer considers most serious and needing increased research effort are the respiratory disease complex, calf scours, foot rot, pink eye, anaplasmosis, leptospirosis, vibriosis, blue tongue, encephalitis and the internal and external parasitism.

Bovine respiratory disease is recognized as the major disease problem confronting the beef cattle industry today. The American National Cattlemen's Association has stated that it is the number one disease problem of beef cattle and therefore a major threat to beef production. They have requested that the United States Department of Agriculture and state experiment stations devote more research attention to the disease. A National Task Force on Beef Cattle Research composed of scientists from the U.S. Department of Agriculture and the state agricultural experiment stations also recognize respiratory disease as the most important single problem facing the beef cattle industry today. In its substantiating data, the National Task Force estimated that a \$255,000,000 annual loss was sustained by the beef industry due collectively to respiratory to pink eye of cattle. It is safe to say that the major segment of this loss is due to the bovine respiratory disease complex.

Enteric diseases of beef cattle (internal diseases) also represent a major loss to the beef industry. The industry is moving toward greater intensification in an effort to make better use of resources and this concentration of cows and calves accentuates the problem.

Internal and external parasitism serve as an additional area of great need for research, especially in southern regions. Internal parasites remain a major problem in cattle despite the advent of new drugs which are generally effective and economical in smaller and non-ruminant animals.

One of the most critical problems in efficient beef production is poor reproductive performances as measured by the numbers of calves produced per cow each year. Presently this rate is less than 0.8 of a calf per cow. Nationwide, a large percent (possibly 12 and up to 20 in some herds and regions) of the possible calf crop is lost before a live calf is born. These losses are due to infertility, embryonic death and infectious agents causing abortion of the fetus. Much of this loss is due to contagious diseases of the reproductive organs and the viral infections of unborn calves.

The American beef cattleman hopes for healthier animals and a more efficient production. The consuming public demands a safe, high quality beef protein food in abundance and at a reasonable price. The passage of the *Animal Health Research Act* would afford an opportunity for researchers in colleges and universities to assist in this research effort on the diseases of beef cattle which bear directly upon production efficiency.

The American National Cattlemen's Association endorses the Animal Health Research Act and considers it an investment for the survival of the beef cattle industry and for assuring this nation of an abundant supply of beef.

**STATEMENT OF C. W. McMILLAN, EXECUTIVE VICE PRESIDENT,
AMERICAN NATIONAL CATTLEMEN'S ASSOCIATION, WASHINGTON, D.C.**

Mr. McMILLAN. Thank you, Mr. Chairman.

As I am sure the members of the subcommittee realize, the beef cattle industry is the largest single segment of agriculture, representing nearly 25 percent of all agricultural income, but in these times when consumerism is so important, I think it is also extremely important for us to recognize that we also represent the largest single expenditure for beef in the consumers' food dollars. Therefore, it is with this thought in mind that I would like to comment today about the importance of enacting H.R. 3286.

On the way up here, in reflecting on the bill and in reflecting on the problem that we do have within the energy crisis—I know all the members of the subcommittee are aware of it—and the importance of developing efficiency and productivity in producing food for U.S. consumers, as well as the development of any overseas market that may exist, as we look at the losses that are caused each year by various animal diseases of a reproductive nature or perhaps the respiratory complex of diseases, I think it would be interesting to look at the possibility for additional beef production that does exist should we have had in the past and the importance in the future of developing more animal disease research to compensate for losses that do take place every year as a result of these various diseases.

Let's assume that we produce each year approximately 50 million calves. Now, part of these would be dairy cows, but if we conservatively estimate about a 4-percent loss of these calves, due to death or even in the embryonic stage, through either the reproductive disease complex or the respiratory disease complex, then we would assume that 2 million of these calves would die every year due to the 4-percent loss, which we do consider to be a conservative figure.

But let's realistically assume that we could compensate by additional research to compensate for the death losses due to these diseases, and we were able to increase our calf crop by 2 percent. That means we would potentially have an additional 1 million steers or heifers in the cattle herd of the United States.

Now, we will single out just the steers, to say nothing of the heifers, and let's assume that half of the crop would be steers. These 500,000 head of steers, then, would potentially produce, weighing 1,100 pounds at slaughter, weighing them after having been fed out, about 550 million more pounds of live-weight cattle in the United States.

Assuming we have about a 60-percent dressing percentage, which would be very conservative, that would mean potentially 33 million more pounds more beef to be produced in the United States each year.

Now that amounts to nearly 1 percent, or approximately 1 percent of the current level of beef being produced in the United States each year. This could mean great things from the standpoint of the consuming public, but it could just as well mean important things in terms of efficiency and productivity to the beef cattle industry.

Now, the beautiful part if it is that you would be adding this tonnage to the supplies with this, essentially without adding any costs to production.

Now, it is with that backdrop, Mr. Chairman, that I would conclude my brief comments here in addition to the statement which as I said will be included in the record, and ask that we hope that speedy action will be taken by the subcommittee and by the House of Representatives and by the Congress in total in hopes that we can move forward on this legislation to attempt to find solutions and answers to this very critical problem of animal disease that does exist in the United States today.

Mr. MELCHER. Thank you very much, Bill, and now if you will stand by and be available for questioning, we will continue with the rest of our witnesses.

Mr. McMILLAN. Thank you, Mr. Chairman.

Mr. MELCHER. Dr. Robert Walton, president, American Breeders Service, De Forest, Wis.

Dr. Walton, the subcommittee welcomes your presence this morning.

STATEMENT OF DR. ROBERT WALTON, PRESIDENT, AMERICAN BREEDERS SERVICE, DE FOREST, WIS.

Dr. WALTON. Thank you, Mr. Chairman. Good morning, ladies and gentlemen.

In addition to representing the American Breeders Service, I am also speaking on behalf of the National Association of Animal Breeders, which is the trade association of the artificial insemination of livestock industry in Columbia, Mo.

In the United States, approximately half of the dairy cattle and a rapidly increasing percentage of beef cattle are bred each year by artificial insemination with frozen semen.

The accomplishments since World War II in the USA of producing each year approximately a constant amount of milk while the population of dairy cattle has been halved and of quadrupling the population of beef cattle, while spectacularly improving their efficiency and meat qualities, derives from several factors.

Important among the contributing factors have been some of the successful disease control programs of the USDA. Widespread application of artificial insemination, or AI, has played a substantial role, not only through dissemination of superior genetic material but, also, by fertility improvement through control of diseases associated with breeding. For example, the findings of past research projects applied through AI have helped substantially to reduce the incidence in herds of the U.S.A. of bovine venereal trichomoniasis and bovine genital vibriosis. These diseases were responsible for ruinous effects upon cattle reproduction and for inefficiencies in milk and meat production in herds of dairy and beef cattle. Unfortunately, AI's progress as a positive force in disease control has been slower than it should have been because of a poverty of hard technical facts flowing too slowly from meagerly supported animal health research at the experiment stations and universities.

After 35 years of growth, the AI industry of the U.S.A. stands responsible for the reproductive efficiency and health of half of our

national dairy herd and a rapidly increasing percentage of our national beef herd. Additionally, at least 600,000 insemination units of frozen bull semen are exported from the U.S.A. each year for use in improving cattle in other countries of the world.

Critically important technical questions need to be answered and procedures developed to cope with virus diseases such as IBR/IPV/IPB, bluetongue, leukemia, and pathogens such as the chlamydia and mycoplasma groups.

AI can contribute to the control of these diseases. However, if the state of our technical ignorance is permitted to persist, unintentionally, or through irresponsibility, some of these diseases might be transmitted through AI.

It has been a characteristic experience of the AI industry that when public institutions charged with animal disease research are approached for collaboration toward the solution of pressing technical problems, only willingness is encountered because no funds are available for new animal disease research. Too many times the response has been, if you can think up an angle relating the problem to human health, we could easily get the money. As a result, the AI industry through the National Association of Artificial Breeders and individual AI organizations, American Breeders Service in particular, have made substantial financial contributions to public institutions equipped to conduct animal disease research in order to obtain answers to critical problems for which public funding was unavailable. We are well satisfied with having provided such support. However, we know that most animal diseases are not related to AI, that most animal diseases involve problems of magnitude far greater than their implications to AI, and that solutions to the problems of most animal diseases are far too costly to be resolved through support by the AI industry.

We are dedicated to the principle that the livestock population of this country and the herds of individual dairymen and ranchers need and deserve all the protection against livestock diseases that can be built into the AI techniques. Only through further research into the nature of certain animal diseases can the advancement of this objective be accomplished.

In supporting H.R. 3286 and related bills, I close by stating that I believe new funding of animal health research from agricultural sources is past due and that only through the establishment of new technical knowledge will it be possible for us to continue to protect and improve the health of dairy and beef herds, and, thereby, assure maximizing production of milk and meat to satisfy the nutritional needs of our citizens.

Mr. MELCHER. Thank you very much, Dr. Walton. If you two would stay with us for a few minutes while we finish with the rest of the witnesses, we would like to have you available for questioning later.

Mr. Ralph Mobley of the National Broiler Council, and you are accompanied Mr. Mobley?

Mr. MOBLEY. Yes, sir; I am accompanied by Mr. Jim Real, attorney for the ational Broiler Council.

Mr. MELCHER. Besides representing the National Broiler Council, you are representing other poultry associations?

Mr. MOBLEY. Yes, sir; 21.

Mr. MELCHER. Twenty-one poultry associations.

We are glad to have you with us, Mr. Mobley.

STATEMENT OF RALPH MOBLEY, GROUP VICE PRESIDENT, GOLD KIST POULTRY DIVISION, ACCOMPANIED BY JIM REED, COUNSEL, NATIONAL BROILER COUNCIL

Mr. MOBLEY. Thank you, Mr. Chairman.

I was asked by the National Broiler Council and the Georgia Poultry Federation, of which I am a **past president, to appear this morning** on behalf of 21 poultry and egg industry associations in support of H.R. 3286. Together these 21 associations represent firms producing, processing, and marketing virtually all of the poultry and egg products sold in the United States.

The legislation which you are considering this morning is good legislation which we think will benefit the Nation by assuring more efficient production, not only of broilers, but of livestock, milk, and eggs as well.

Expanded research will allow broiler producers to do a better job of assuring adequate supplies of poultry at reasonable prices. Research leads to better disease control and thus reduces the number of unhealthy meat and poultry which now must be condemned every year by Federal and State inspectors.

H.R. 3286 would provide Federal financial assistance to eligible institutions having colleges of veterinary medicine or agricultural experiment stations with veterinary science, animal pathology, or similar departments. These grants would be used to support continuing animal health research, research on specific national or regional animal health problems and the establishment and improvement of animal health research facilities.

The veterinary science programs which would be able to expand research under this bill have a significant record of accomplishment. And yet when the U.S. Department of Agriculture programed its animal disease research funds for fiscal year 1973, only \$1.7 million was allocated to colleges of veterinary medicine and \$2 million to State agricultural experiment stations, while \$19.7 million went to Federal laboratories. The work which is done in the laboratories of USDA's Agricultural Research Service is outstanding. There should be more of it rather than less. But there should be a proportionate emphasis on the fine work which can and will be done at colleges of veterinary medicine and State agricultural experiment stations.

The sums which have been directed to animal health research are certainly modest when compared with the \$35 billion of poultry and livestock produced this year in this country. The need for more research is dramatized by the fact that the National Academy of Sciences has estimated that annual losses from animal and poultry diseases and parasites exceeds \$3.6 billion. In fiscal year 1972, USDA's Animal and Plant Health Inspection Service reported condemning a total of 423,000 animals and animal parts and 404 million pounds of poultry. Largely for reasons of disease, these animals were lost to the producer and lost to the consumer.

Much of the immense growth of the poultry industry in the past two decades has been due to improved methods of disease control, methods developed by research in experiment stations, laboratories, and colleges supported by a variety of sources. Their track record warrants further and broader support.

During the sixties, per capita consumption of broilers increased from 23.4 pounds in 1960 to 37.3 pounds in 1970. By 1970, broiler sales were more than \$4.26 billion; they are even greater today. This expansion could never have occurred without advances in veterinary science. As poultry flocks and poultry houses have become larger, good disease control has become more and more important. Today, one diseased bird may threaten 50,000 other birds in the same house. The poultry industry relies on improvements in veterinary techniques to maintain flocks which are healthier, larger, and more productive than ever before in history.

One example of poultry research improving productivity is the introduction of Marek's disease vaccines in 1971. It has been estimated that these vaccines alone may add as much as 5 percent more broilers to our total meat supply by reducing mortality rates and illness. H.R. 3286 would authorize increased support for this type of research.

Obviously, the Nation has a major stake in avoiding epidemics and other substantial disease problems which threaten the supply of important foods. A relatively few million dollars spent for research now could save the industry and the Nation vast sums in economic losses and food shortages in the future.

In recent months relatively small food shortages have created severe economic dislocations and large price movements. The Nation is fortunate that during the past 24 months, the outbreak of exotic avian Newcastle disease in California has been brought under control. This was accomplished by a huge Federal task force, a task force led by outstanding veterinarians. If exotic Newcastle had become a national epidemic, the broiler industry, as we know it, would probably not still exist today.

It takes more than money and manpower to eradicate an epidemic like the Newcastle outbreak. It takes planning and preparation and research so that the disease can be identified, vaccines developed and eradication techniques perfected. This Nation has the world's most efficient poultry production because we do not have exotic avian Newcastle disease here. It is prevalent throughout large portions of the rest of the world.

The impact of disease on both poultry and livestock can have such devastating effects on the national diet and on the economy that it is only prudent to provide the sort of research support authorized by H.R. 3286.

The research which will be supported by H.R. 3286 will help guarantee greater productivity in the poultry, egg, livestock, and dairy industries. This is in the national interest. This is the kind of research which repays its cost many times. Equally important is the support H.R. 3286 can provide against catastrophic outbreaks of animal and poultry disease.

In sum, the poultry industries of this country, submit that H.R. 3286 is needed and desirable legislation.

We hope the Congress will show the same unanimity of support for this legislation which we find among poultrymen.

Mr. MELCHER. Thank you, Mr. Mobley, and now if you could stand by and be with us for questioning a little bit later, and we will take up the rest of the witnesses.

Mr. MOBLEY. Thank you, sir.

Mr. MELCHER. Mrs. Christine Stevens, secretary, Society for Animal Protective Legislation.

Christine, we want to welcome you to the subcommittee. It is good to have you with us. I have already read your statement. I know that we can give it support, and I know that your amendment is acceptable. The subcommittee is delighted to hear from you.

STATEMENT OF CHRISTINE STEVENS, SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

Mrs. STEVENS. Well, thank you very much, Mr. Chairman.

Since you have read the statement, perhaps I might ask that it be placed in the record, and I will comment on it.

Mr. MELCHER. Certainly, without objection, Mrs. Stevens. It will be permanently a part of the record at this point of hearing. No objection? So ordered.

[The information referred to follows:]

STATEMENT OF CHRISTINE STEVENS, SECRETARY, SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

On behalf of the Society for Animal Protective Legislation I wish to propose that H.R. 3286 be amended to specify that research on animal birth control is included in the grant program proposed.

Birth control is an important part of animal health, and some who have read the bill interpret it as including this field of research. However, we believe that a clarifying amendment making this a specifically mentioned part of the program is necessary to ensure that it receives the attention it so urgently requires.

Lack of knowledge of how to prevent births in a number of animal species by economical, humane means is costing our country very substantial sums of money. Development of good methods would benefit the livestock industry in particular and citizens generally through the following applications:

(1) Control of coyote populations in specific areas. Some work which appeared promising has been done on this, but funds have not been available to pursue it.

(2) Birth control where necessary for the livestock itself until such time as births are desired.

(3) Birth control for companion animals. In the country, this is important to guard against the development of packs of feral dogs, a threat to livestock.

In the city, it is needed to prevent the birth of unwanted pups and kittens, a most serious humane problem, since such homeless creatures often die slowly and horribly of starvation, disease, or being struck by automobiles. Those collected by impounding authorities, almost always for euthanasia, have no chance to fulfill their lives as companion animals, and the cost to city governments of the gruesome job of catching and killing tens of thousands of animals often runs into millions of dollars.

For the record, I would submit statistics recently compiled in California on this subject.

Spaying of animals is, of course, a well established and valuable means of preventing births. However, it is expensive and time consuming and the need is vastly greater than could be met even if all veterinarians devoted themselves entirely to performing hysterectomies. Further, surgical intervention is impossible with wild carnivores. Birth control for coyotes must necessarily involve a substance which can be placed in meat which will be eaten by the coyote.

Different means may be suitable for different situations and different species. In our view, there is no other animal health problem so pressing as this—none so urgently in need of the earliest possible solution. Therefore, we will strongly support H.R. 3286 only if it is amended to provide grants in this shockingly underfunded field.

Mrs. STEVENS. It hardly seems necessary for me to testify if you as chairman feel this amendment should be added. The reason, of course, for wanting animal birth control to be included in the bill is that animal birth control is often in a very, very low priority. There is almost no money at all available for research in this field, although huge sums of money are being expended continually—very large sums of money are being expended by local government to catch and destroy dogs and cats that have no home, and if comparable sums were not spent on research for animal birth control, it would be far more humane and would solve the problem, so that all of the attendant dangers for both animals and humans would be eliminated.

Further it is very badly needed in control of predators. If a means could be found to sterilize, or even temporarily prevent the births of predatory animals as well as dogs and cats for whom no homes are available. Sheep losses again could be cut by a humane means, and one that is completely safe for the environment.

There is some use for birth control in livestock itself, although that is not as big a problem as the other two. However, this will obviously be highly valuable and could be used in all of these three ways if perhaps more than one method of affecting sterilization, without surgical intervention—which is so expensive and so time consuming for the veterinary profession—could be found.

Mr. MELCHER. Christine, I want to make part of the record. I am assuming when you say birth control in livestock, you are referring to the timing of livestock.

Mrs. STEVENS. Yes, sir, the timing of it, stretching it out.

Mr. MELCHER. All right. Thank you. Do you have any more comments?

Mrs. STEVENS. I think in the interest of time—

Mr. MELCHER. If you could remain with us, Christine, until we conclude with the other two witnesses, and then be available for questions.

Mrs. STEVENS. Thank you, Mr. Chairman.

Mr. MELCHER. Thank you.

Mr. B. H. Jones, the executive vice president of the National Livestock Feeders Association, Omaha, Nebr.

Mr. JONES. Good morning, gentlemen.

Mr. MELCHER. Bill, we are glad to have you here. The subcommittee is indebted to the National Livestock and Feeders Association on many occasions for the advice and suggestions your associates make.

STATEMENT OF B. H. JONES, EXECUTIVE VICE PRESIDENT, NATIONAL LIVESTOCK FEEDERS ASSOCIATION

Mr. JONES. Thank you, Mr. Chairman. At this particular time I would say I do not think it is necessary for me to take very much of the committee's time. We would request that the statement be included in the record verbatim, and I will just make a few comments and await your questions, if that is satisfactory.

Mr. MELCHER. Without objection, Mr. Jones' entire statement will be made a part of the record at this point.

Hearing no objection, so ordered.

[The information referred to follows:]

STATEMENT B. H. (BILL) JONES, EXECUTIVE VICE PRESIDENT, NATIONAL
LIVESTOCK FEEDERS ASSOCIATION, OMAHA, NEBR.

The National Livestock Feeders Association strongly supports the passage of H.R. 3286 to be known as the "Animal Health Research Act"; and respectfully urges the Subcommittee on Livestock and Grains to act favorably on the proposed legislation.

THE PUBLIC INTEREST

Despite the urgent need to expand agricultural production, and specifically meat production, animal research is inadequately supported to meet the growing challenge of the future.

Expansion and greater efficiency in animal production is essential to the Nation's food supply and, therefore, the interest of consumers—the public interest, if you will—dictates that greater attention be given to animal health research.

Disease and other animal health hazards which reach epidemic or quasi-epidemic proportions are disastrous to our food supply. Less dramatic but still very costly in terms of meat production, are the losses due to sickness and injury which occur more or less on a daily basis.

For example, a recent survey conducted by Livestock Conservation, Inc. in cooperation with the Nebraska Livestock Feeders Association and sponsored by the Nebraska Beef Industry Foundation, indicated that 352,800 head of cattle died from shipping fever in 1972.

LCI analysts calculated that this loss would be the equivalent of 220 million pounds of carcass beef which did not reach consumers—enough to feed a city the size of Chicago for about six months.

LCI also prepared information for the Cost of Living Council on hog losses. In terms of hog numbers, it was estimated that 6 to 6½ million pigs weaned did not reach the slaughter market. This would be equivalent to approximately 7% of the total fed hogs marketed. In addition, condemnation due to disease was estimated at around 5 million carcass parts.

Another equally important aspect of animal health research, as stated in H.R. 3286, is the control of animal diseases transmissible to humans. There are, at the present time, many unknowns in this field of study and research is needed to provide the necessary answers.

To repeat, it is clear that the public holds the overriding interest in research of this nature, from the standpoint of both the supply of meat and its cost. The interest of the livestock producer is important, but generally it is incidental to that of the public.

COORDINATION NEEDED

Close coordination in animal health research between the Federal Government and the various State research institutions is necessary in order for the overall program to be most effective and produce greatest results at the least cost. In the past, there has appeared to be duplication of effort and, perhaps, some necessary work has been neglected as a result thereof. Passage of H.R. 3286 should not only broaden animal health research, but also bring about the needed coordination. Both will benefit consumers as well as the livestock industry.

POSITION OF NLFA MEMBERS

At the most recent annual meeting of NLFA (February 1973), the membership urged the United States Department of Agriculture to exercise leadership in organizing, conducting, and assisting with long-term, indepth studies of the diseases of feeder cattle, including those which result from stress and exposure in transportation and marketing. The membership further suggested that said studies be conducted by using the resources and scientific disciplines of state experimental stations.

The membership also again declared its support for programs aimed at the eradication of all communicable livestock diseases. They expressed intense concern over the possible entry of foot and mouth disease into the United States and pledged to work closely with Governmental officials to prevent such entry.

During their deliberations on animal disease control, the members emphasized the broad extent of health problems. Attention was called to the evidence that the incidence of respiratory disorders is significantly higher in cattle riding on the

top deck of livestock trailers. This was attributed to the point of exhaust discharge common to most livestock trucks. It was recommended that exhaust discharge systems be designed to reduce this problem.

CONCLUSION

It is the opinion of the National Livestock Feeders Association that the passage of H.R. 3286 would contribute substantially to more fruitful animal health research throughout the United States and thereby be in the public interest and at the same time improve the economical position of the entire livestock industry.

* * * * *

Mr. JONES. We sum up our stand here of strong support for the proposed legislation, and in our statement we have concentrated primarily on the fact that this legislation is in the public interest, and we would say also that while it is advantageous to the livestock industry, that the individual livestock breeder is incidental to the public.

We would call the subcommittee's attention to the paragraphs which we have included here which do set forth results of some surveys that have been conducted recently.

For example, a recent survey conducted by Livestock Conservation, Inc., on shipping fever, indicated that 352,000 head of cattle did die from shipping fever in 1972 alone, and this, according to their calculations, would be the equivalent—had it reached market weight—of sufficient beef to feed a city the size of Chicago for 6 months. I think this sets forth, then, the public interest that is involved as far as disease control is concerned, and also, LCI made a similar study for the Cost of Living Council on hog losses, which showed in terms of hog numbers of about 66½ million pigs did not reach slaughter weight. This is, of course, in addition to the condemnation due to disease which were estimated around 5 million carcass.

We would also call the committee's attention to one other important area, and perhaps this area is the one that has been avoided the most as far as research is concerned, and that is the area of diseases that are transmissible to humans. As you know, many of the decisions made in this area today are not based upon sound fact—based upon testimony which is not backed up by sound research—and we would urge that this area be given great consideration.

Only one other area, Mr. Chairman, and that is the need for coordination here, and we do feel that we have an excellent system in agricultural research, but we do know there is some duplication, we think, and one of the functions that the Federal Government should perform is coordination, and certainly we are not suggesting that more research facilities be built, because we do use those now available at the State level and use the disciplines that are available, but we do tighten the coordination here. As is stated in the legislation, this is one of the purposes of the legislation, and so we do strongly support the passage of this bill.

Mr. MELCHER. Thank you very much, Bill, and if you would stand by and be with us so the subcommittee can have the benefit of questioning you.

I will recognize the gentleman from Minnesota, Mr. Zwach.

Mr. ZWACH. Thank you, Mr. Chairman.

Mr. Chairman, it is a privilege for me to introduce the next speaker.

Our State of Minnesota, as you know, is the greatest turkey producing State in the United States, and it centers mainly in my con-

gressional district and Mr. Bergland's district, and so along with our great dairy, hog, and beef production we also are turkey people. It gives me great privilege to introduce Roy Munson, executive secretary of the Minnesota Turkey Growers Association.

Mr. MELCHER. Welcome to the committee, Roy. Will you identify your cohort there?

Mr. MUNSON. Yes, sir, Mr. Chairman. This is Stanley Black from Spicer, Minn., the vice president of our Minnesota Turkey Growers Association.

Mr. MELCHER. Good to have you with us today, Stanley.

Mr. MUNSON. He is also a producer of hogs and beef, and so is interested in other livestock other than turkeys.

STATEMENT OF ROY MUNSON, EXECUTIVE SECRETARY, MINNESOTA TURKEY GROWERS ASSOCIATION

Mr. MUNSON. Mr. Chairman and members of the Subcommittee on Livestock and Grain, I am Roy Munson, executive secretary of the Minnesota Turkey Growers Association, headquartered in St. Paul, Minn.

Minnesota is the largest turkey producing State in the Nation with about 500 growers. In 1973, over 23 million turkeys were raised or about 18 percent of the Nation's turkey crop. The value of Minnesota's turkey crop is over \$100 million and represents 3.1 percent of the cash receipts from farm income for our State.

We appear here today in support of H.R. 3286, the Animal Health Research Act. We wish to add, however, that the formula must also be based on both the value and the income of livestock and poultry, in order to have an equitable formula for allocation of research funds to the various States.

Animal health is vital not only to the producer for economical production, but also to our country's consumers who are dependent on wholesome and economical food for their families.

Although there has been tremendous improvement in the health of our livestock and poultry due to the reduction, control, and elimination of diseases, disease is still an important factor in the economical production of our turkeys and poultry. In 1972, a survey on turkey deaths and causes made by the Minnesota Crop and Livestock Reporting Service, reported that 8 percent of the 20 million turkey poultry started in Minnesota, were lost due to disease and other causes. Among the diseases causing high mortality, are coccidiosis, coli infection, and fowl cholera.

This survey reported that deaths from Blue Comb disease, were down to only 1 percent, from 23 percent in 1966. Through extensive research on this disease, it was found that if a flock becomes infected, the loss from mortality and morbidity is about 4 cents per pound on the entire flock. The causative agent of this disease still has not been isolated, but through good management and sanitation practices, the disease has been controlled. This season only two flocks have become infected.

This is one example of how research, conducted in the production areas, can be vital in finding solutions to the problems.

Another example is Fowl Cholera which costs the turkey industry about \$15 million each year. This disease is a problem in all the major

turkey producing areas. Research results are beneficial to all areas and the information is disseminated very rapidly as it becomes available.

The land grant institutions and the veterinary colleges have competent scientists and in most cases, adequate facilities to conduct research, but they are not adequately funded. The Animal Health Research Act would provide funds on a proportionate basis to these institutions for conducting needed research in these vital areas.

To insure that turkeys and turkey products continue to be available at economical prices to the American consumer, we must find better answers to our animal health problems and this will be accomplished by the Animal Health Research Act.

Thank you for permitting us to appear before your committee.

Mr. MELCHER. Thank you very much, Roy, and now if you will make yourselves available. Now please stay right with us, because this concludes our witnesses today. If all of you could come forward to be at the table and the first row, then the subcommittee will probably have questions or comments.

Mr. SYMMS. Mr. Chairman?

Mr. MELCHER. Gentleman from Idaho.

Mr. SYMMS. If I could, I have a statement here from Dr. Floyd Franks from the Department of Veterinary Science, University of Idaho, a letter and a statement. I would like to submit it for the record, at this point.

Mr. MELCHER. Dr. Franks' statement was made a part of the record during the hearing yesterday.

Well, we have had a broad cross section of witnesses this morning representing the livestock industry including the horse industry. We have heard spokesmen representing poultry raisers across the country, and also Christine Stevens, representing a viewpoint of humanitarians concerning what could be done.

I just have a few comments to make at this time, and then we will start our questioning.

I am very much impressed and encouraged by the kind of support we have received in the testimony this morning, and I could not help think while Dr. Maurer was making his statement that while this country has not necessarily gone backward in many areas of research—indeed we have gone forward—but we are finding other countries beginning to catch up to us and sometimes exceeding us in various areas of scientific research. But I do not know of any comparable degree of leadership anywhere in the world that can touch us in the research that we have conducted in veterinary medicine, and I would like to keep it that way.

I think we are leaders in that, and here is Dr. Maurer who is an outstanding world authority in several areas of animal research, particularly horse diseases. It brings it home at least to me, that this is one of the very vital areas in which this country has a unique leadership in serving the rest of the world.

You talk about African swine fever, which can upset the whole nutritional capability of some countries. In Africa, particularly in undeveloped countries, it has caused real hardship. In Cuba, too, and it impresses on us again that our country has found ways of eliminating such dangers.

Now, that does not mean it will always be that way. Indeed, African swine fever certainly does pose a terrible threat to us, as Dr. Maurer mentioned, when it is only 90 miles from our shore, existing in Cuba.

Bill Jones mentioned the need for coordinating research and there certainly is a need. It is necessary to have coordination of our research and this bill, or a bill something like this, goes all around the country and says, now, let's put it all together and have some coordination and ongoing research, not just something we are going to have on the basis of a grant for a year's time or some funding from the National Institute of Health to proceed on animal disease research as long as you can see that it has something to do with human health.

I think the type of approach similar that we have in this bill is absolutely essential.

Of course, we are going to continue in veterinary research to tie in to features of protecting human health. Dr. Maurer did not mention it, I believe in his testimony, but in Venezuelan equine encephalomyelitis there was a serious threat to human health in this country should the disease have become endemic. Fortunately it is not endemic in this country, even though it is found some distance south of the Mexican border.

In considering the reasons for the legislation, we are talking about economic interests. We are talking about humanitarian interests. I think Christine Stevens' point on humaneness is a point that should be taken into consideration. I think we should consider the humaneness of eliminating the suffering of animals on a broad scale, and certainly we do not want to see a baby calf dying a lingering death, a 2- or 3-day lingering death simply because we do not know how to cope with a disease. Or you see the effects of shipping fever such as Bill Jones mentioned where you not only have a death loss but you have the suffering involved and the accompanying weight loss, and you get back to an economic situation there, too.

Now, the bill is very conservative. In fact, I do not think any of the statements made today were anything but conservative statements, talking about the economic costs involved or the economic gain that could be had if we had research that solved some of the problems. I think that very probably if we addressed ourselves properly, used all of the research tools that are available in the country, we would certainly increase the production of our beef herd by 2 percent, I mean the production in terms of calves born each year. That is a very modest figure, 2 percent. We have the capability of doing much better than that if we really put our best efforts into it.

When we put all of this together and then say that we are really doing something for the food consumers of this country, we are not bragging a bit. We are being very conservative when we say that. I think the points that Mr. Mobley made and Roy Munson made on behalf of the broiler industry and the turkey industry, respectively, are certainly points that are well made and very conservative points, and not pie in the sky. This is what is available to this country if we want to follow this type of program within the next 10 years.

Now, I hope that we can get some coordination. I think that we can move this bill and I think it can cover the whole broad range spectrum that we spoke about today.

Senator Smathers presence with us today does, I think, lend a great degree of dignity and prestige to our meeting, and I just want to conclude my remarks by saying I am particularly pleased with the quality, the character, and the directness of the testimony that we received here today.

The gentleman from Minnesota.

Mr. ZWACH. Thank you, Mr. Chairman.

I think basically I would like to echo, Mr. Chairman, what you have said. These folks certainly have presented a very good case, and it was a very great privilege to work in the State legislature on committees dealing with animal diseases for years. In 1935, the main problem was tuberculosis, and we started to whip tuberculosis and hog cholera and mastitis, and I have been impressed by what the States and the Federal have done.

I am also concerned about what is yet to do. I would like to get some specific information. Is there a feeling that the Federal level is juggling your figures and doing more 1 year and less another year when even OMB feels that things are tough?

Is there a feeling that the Federal Government is not doing enough in this area, and that there is not a continuity of help?

I would like to have your comments.

You folks also appear before the Appropriations Subcommittee which, in the final analysis, appropriates these funds. Could we have a comment from any of you?

Dr. Maurer, is it?

Dr. MAURER. Yes, sir.

Mr. ZWACH. Yes; if you would speak up so we can all hear you.

Dr. MAURER. Yes, sir. I most assuredly agree with the statement you made that there is inadequate funding at the Federal level for livestock research today. It is not only inadequate, but it is very inconsistent in its level.

Mr. ZWACH. It is inconsistent.

Dr. MAURER. Yes, sir.

Mr. ZWACH. It is up and down?

Dr. MAURER. It most certainly is. And I am sure as I talked to individuals in the Department of Agriculture, they feel this way as keenly as I do, that it does not make sense for us to save money 1 year and at the same time avoid the insurance that would protect us so we could save money for the next 20 years. For the Bureau of the Budget to shut down funds which would save us money for years to come just does not seem good economics to me.

Mr. ZWACH. It really is not the Department that knows most about it, that is calling the shots.

Is that what you are trying to say?

Dr. MAURER. No, sir. If we were good enough salesmen, we would have 10 times as much money in the Department of Agriculture for livestock research than we do.

Mr. MELCHER. Well, would the gentleman yield?

I think it is important for the record at this point to identify who is stifling the funds.

You are speaking about the Office of Management and Budget.

Is that not true?

Mr. ZWACH. Yes, they are the ones that control it.

Now, let us proceed to another factor.

It would appear that as it has been going at the Federal level, we are erratic, unreliable, and really have not year after year on a gradual basis as inflation hit, increased the funds that we contribute.

Now, let's look at the State level and I must stress that the States are very, very important in this.

Have the States been doing a better job? Have they been increasing the appropriations every year in this sector?

Have the States been doing a better job?

Dr. MAURER. No, sir, I do not think they have, certainly not in my State.

Mr. ZWACH. This is the point I want to make.

One of the things that we have done at the Federal level is to try and use general revenue sharing and release a lot of funds to State governments, county governments, et cetera. But now let's think about the State, what they have done with these funds.

My State of Minnesota, for instance, will have received over \$93 million of revenue sharing by the end of next June, with the hope that these funds would be used as the State's needs dictated, such as into health, not only animal health but human health as well.

I am wondering if the State has been picking up part of your financing load as they have had millions of dollars of revenue-sharing funds.

It is not doing a job, Mr. Munson.

Mr. MUNSON. I would speak to that and say that this money has not been channeled on into the type of thing we are speaking about here today. The money goes into other programs relating to human people and poverty areas, and as far as animal research I do not think any money has come down to the State level in a revenue-sharing program.

Mr. ZWACH. You are secretary of the turkey group, and you know that there has been no enhancement of work in your area because of revenue sharing.

Mr. MUNSON. No, sir.

Mr. ZWACH. Well, I wonder if any other person or any other State would like to speak to that.

Would you like to?

Dr. MAURER. I know in the case of the horse, the figures that I have for 1972 are that the Hatch funds, which need to be matched in part from State funds, provided \$154,000 for equine research in all of the States, and that all of the States collectively provided some \$500,000 to match that. This is precious little for the total.

Mr. ZWACH. Now, do you get adequate opportunity to appear before the Agricultural Subcommittee of the Appropriations Committee to present and give them the full force of your case?

You have the opportunity, do you not, to appear and you do appear?

Mr. SMATHERS. Yes, sir, I think I can answer that.

Mr. ZWACH. Well, will you folks appear, and do you appear?

Mr. SMATHERS. Yes, sir.

Mr. ZWACH. You are fully heard there?

Mr. SMATHERS. Yes, sir we have been given opportunity. We have to request the opportunity and then in answer to our request the Congressmen are kind enough and the committee is kind enough to let us testify. However this we have not yet had the opportunity to testify on this.

Mr. ZWACH. The real value of this legislation would be to give a continuous, definite, laid-out program.

Mr. SMATHERS. Unless this bill is passed, we will not be given any opportunity to appear before the Appropriations Committee. In other words, this authorization legislation would have to be passed before we would be given the opportunity to go before the Appropriations Committee.

Mr. ZWACH. That is correct, Mr. Smathers. That is all for now, Mr. Chairman.

Mr. MELCHER. Well, I would just like to follow that up, Senator.

Do you appear before the Appropriations Subcommittee for funding under the Hatch Act?

You do but it is a pittance, isn't that true?

Mr. SMATHERS. Yes, sir.

Mr. MELCHER. I would also like to commend the gentleman from Minnesota, Mr. Zwach, for bringing out this point on revenue sharing. I think all too often—about every time we talk about something new in Congress—we try to solve a problem jointly and cooperatively around the country with the States, and working as we would in this bill in the veterinary stations and the veterinary colleges, it is sometimes rough for us to decide because the problem is one some say could be solved through revenue sharing.

And I think the questions have made it quite clear here that revenue sharing is not going to reach the field that we are talking about, animal research or poultry research, and certainly if it were ever to reach that field, which I doubt, it would not be coordinated, because we would have some research going on in one State, and none in another, or some regions or some types of poultry or livestock being completely ignored, or you could have some comparable kinds of research going on that were not coordinated.

So I think the gentleman's questions and the answers we have received make it quite clear that revenue sharing does not begin to solve the problem we are talking about, and it cannot be contemplated as a solution to it.

The gentleman from California?

Mr. SISK. No questions.

Mr. MELCHER. The gentleman from Colorado?

Mr. JOHNSON. Thank you, Mr. Chairman.

I am a cosponsor of a companion bill and I am in favor of this bill, but there are some questions which have been raised and I think will probably be raised in opposition to the bill, and so I would like to get some more ammunition from you people if I might.

Dr. Maurer, I suppose you are the best one to give your estimate of these, and I am not trying to hold you to hard-and-fast answers on this, but I come from Fort Collins, where we have Colorado State University—I am sure you are familiar with that as a veterinarian school.

Some people are talking about matching contributions, adding a provision into this bill that would require matching contributions from the State.

Now, I know that Colorado is making a great expenditure in keeping its veterinary school alive where the research can be done and would probably not be able to provide much in the way of matching funds.

Can you tell me what the rest of the States that you are familiar with would be able to do under this kind of a bill if there was a matching fund requirement?

Would they be able to contribute additional amounts to their schools so that they could get some of the Federal funding that would be involved?

Dr. MAURER. Well, this is not an easy question to answer of course, and there are obviously two sides to it. I am sure that the question of opportunity provided by Federal funds would inspire some State matching money that does not otherwise come to the veterinary schools, so one can speak in favor of the matching money in that respect, but I think it is also true that there are many States which would not be able to provide enough matching money, or would not provide enough matching money to get the full benefit of the bill if you ended up matching.

Mr. JOHNSON. What do you think would be the cost requirements for not just a crash program under this bill but a steady, sustained program?

What would it cost throughout the country?

Dr. MAURER. Well, the thing of it is, for the past 2 years we thought it should be an increasing amount per year over about a 5-year period, and then level off with the idea of providing for the idea of facilities to be developed and staff to be developed so there would be no money wasted, and if this could start out with say \$5 million for research and \$5 million for facilities the first year, and increase \$10 million a year for 4 or 5 years up to about a \$50 million level per year, this would give the country an opportunity to develop the capacity to really do the job.

I think that amount can most effectively be spent.

Mr. JOHNSON. Thank you, sir.

And I suppose you are probably the best one to answer this, too.

Can you give me some examples of carryover from research on animal diseases that might have benefited, encephalomyelitis the Chairman mentioned, is one of them, and I would like to have some more.

We do have encephalomyelitis in Colorado where every year a child or two always gets encephalitis and dies. That is one obvious example.

Dr. MAURER. Yes, sir. The three, Eastern, Western and Venezuelan encephalomyelitis diseases are all infectious to men. Brucellosis in cattle and of swine, of course, was a major problem with man before that disease was essentially controlled. Tuberculosis of domestic livestock is always a hazard to man. Rabies is another one, leptospirosis.

Mr. JOHNSON. What is that?

Dr. MAURER. This is a bacterial, leptospiral organism.

Mr. ZWACH. If the gentleman would yield, I would like to add that this disease is indeed a bad one.

Dr. MAURER. With your permission, I have a statement here on zoonotic diseases of animals which are infectious to man which I will be pleased to make a matter of the record.

Mr. JOHNSON. If you could, please, I think that will be helpful to us in trying to sell this bill.

Mr. MELCHER. Without objection, Dr. Maurer's statement on zoonotic diseases will be made a part of the record at this point.

Dr. MAURER. And while we are at it. I have several other statements, one which concerns wildlife, swine, poultry, sheep and goats which we have prepared on behalf of the bill, which I would like to see introduced, if possible.

Mr. MELCHER. Without objection, all of the statements by Dr. Maurer will be made a part of the committee files, and I commend you, Dr. Maurer, because I think it will make a much finer record for us.

I hear no objections. So ordered.

[The information referred to may be found in the files of the committee.]

Mr. JOHNSON. Thank you, Mr. Chairman.

One final question.

Can any of you tell me anything about what is going on in the area of private industry in the drug companies, if they are doing any research that is significant in this area?

Bill, maybe you can.

Mr. McMILLAN. Now, Mr. Johnson, I do not have the figures, but that the pharmaceutical companies would primarily be involved in developing new vaccines, antibiotic materials or what have you for various animal diseases. But looking at it from a different direction and alluding to Mr. Zwach's line of questioning, with the, let's use the term harrassment, that is brought about by agencies of the Federal Government, standards that have been set by the Food and Drug, or the inspection of the U.S. Department of Agriculture, there could be a general discouragement on the part of private industry to carry on new research and development, to find solutions to the various animal disease problems that exist.

I think that this speaks more and can in essence give you ammunition that you seek to push this bill forward, because the Federal agencies on one hand are going to discourage research on the part of private industry. Then there ought to be some compensating factor to offset the discouragement in finding the various solutions to the animal disease problems that do exist.

Mr. JOHNSON. I assume you are talking about the Delaney amendment.

Mr. McMILLAN. That would be one illustration, yes.

Mr. JOHNSON. Yes, sir.

Dr. MAURER. Please let me make one comment about that same subject.

There is a situation in Texas right now that we think is very hazardous to the country, in that the boophilus tick, which is the transmitter or vector of Texas fever, the babesiosis disease or Texas fever, which cost the States in the South some \$40 million a year up until about 30 years ago and then was eliminated by eradication of that tick, and now that tick, some 16 months ago invaded southern Texas across the river from Mexico, has been in 29 counties. This tick is a vector, as I say, of infectious fever. There is a drug which will eliminate Texas fever very readily called Aminogard, by Burroughs-Wellcome. We have been trying for a year and a half to get this drug cleared. We have got a total of \$7,000 from Burroughs and Wellcome to work on this drug. It is one that will eliminate the disease with a very small dose, but because of Food and Drug regulations we still do not have it cleared.

Now, we have had no money to work on this drug except for the \$7,000 we have got from the company, and obviously here is a disease that threatens the cattle industry of the South and potentially beef prices for the whole country, of course, and precious little is being done about it because the only support we have is—the only help we have is a little from the drug company.

Now, this would give us tremendous help to get basic work done on that drug to make sure the residues are not hazardous to man. If we only had a little more money to work with.

Mr. JOHNSON. If you have any more examples like that, Dr. Maurer, you could submit them for the record.

Thank you, Mr. Chairman, I have no more questions.

Mr. MELCHER. The gentleman from Minnesota?

Mr. BERGLAND. Thank you very much, Mr. Chairman.

I want to join my colleague, Mr. Zwach, in welcoming Roy Munson and his associates to this hearing.

I have been informed by Sid Ewing of the Department of Veterinary Medicine at the University of Minnesota that the Minnesota turkey growers have every year made a substantial financial contribution to the research work undertaken by the university in attempting to conquer some of the diseases of turkeys. It now approaches \$100,000 a year, and I commend you for your support of this very worthwhile effort.

But I want to get to a question that was first raised by Mr. Johnson. Recently I had an off the record, informal visit with a nontechnical administrator of the Department of Agriculture and one of his counterparts in the Office of Management and Budget about research in general and specifically animal research.

Their concern was that if we were to increase the Federal support for research in the various diseases, this would tend to discourage the private contributions that have been made by such groups as the Minnesota Turkey Growers Association, that the burden would fall entirely on the taxpayers, much of which is now being assumed by private sources.

Could any of you comment on this?

Mr. Munson?

Mr. MUNSON. I would speak to that. I think in answer to what Mr. Johnson was talking about as far as matching funds, I think if there were matching funds available on the Federal level, that real efforts could be made at the State level to get State matching funds, but I would like to go one step further. I think industry, and I know the Minnesota Turkey Growers Association, that we would be equipped to carry out the program on a matching basis to get some of these programs done, and I am sure that some of these other States that have programs in this area would consider doing this in order to get some of this work done, because it is all part of the livelihood of the industry we are working in.

Mr. BERGLAND. So you are saying in effect if the matching program were enacted, it would probably generate more private support.

Mr. MUNSON. Yes, sir, I believe it would. I believe Minnesota—and I cannot speak for Iowa and Missouri, but the States that now have a state checkoff program, that they would be delighted to be able to match their funds to something to carryout some of these programs that they need to have done.

Mr. BERGLAND. Anyone else want to comment?

Mr. JONES. Mr. Bergland, let me say quite firmly that that kind of argument is completely fallacious because if private firms cutback on research it will be because of reasons that Bill McMillan alluded to, not because there is more money coming from the Federal Government. There is nothing from the history back down the line anywhere that indicates more money coming from the Federal will pull money away from the private sector. In fact, it will do the reverse.

There is nothing that would discourage the private sector more than for there to be inadequate moneys coming for theoretical research. But the moneys that the industry puts in, by and large, are practical operating research projects, and certainly a cutback in the Federal will discourage that. So there is absolutely no basis upon which to make an argument that the industry will then want to lean on the tax wall. This is just completely erroneous.

Mr. BERGLAND. Yes, sir.

Mr. WALTON. I would simply support what these two gentlemen have said, speaking on behalf of the artificial insemination industry. We are not looking for somebody to pass the buck to. We are just saying that there is a bigger problem than we can cope with and we would like to have some help with it, but I am sure that you could get increased support from the private sector as a consequence of the passage of such legislation.

Mr. BERGLAND. I have heard critics of increased research in this area suggest the problem is not so much in the basic research field but rather in the delivery system, that we are not able to deliver this knowledge and technology out to the industry, and that many of these losses can be attributed to bad management, or to the lack of knowledge on the part of the manager of the livestock enterprise.

Would anyone comment on that point?

Yes, Doctor.

Dr. MAURER. Well, I used to be Associate Dean of Research at the College of Animal Medicine. We have a large diagnostic lab for the State in our backyard. That diagnostic lab is overburdened with the flow of material referred there by practitioners from the State. Our clinics are full of animals all the time from around the State.

If there is anything we know, they want to know it. There is no question about the lack of the flow of information that is available, and we do not hold back. Heavens knows, we need more information than we have got. So at least in Texas I could say, anything that we know at the College of Veterinary Medicine or that we can dig out of the literature, we apply. This just does not happen that way.

Mr. MELCHER. Will the gentleman yield to me?

Mr. BERGLAND. Yes, certainly.

Mr. MELCHER. I would like to take it one statement beyond that, and I have heard the statement alluded to often, but I would like to present my benefit of 20 years of the practice of veterinary medicine. The flow of information from the local veterinary out to his clients is indeed rapid.

We found, whether it was because of the media or because of the new type drugs that we had, my partner in veterinary medicine practice and I found we did not have any problem communicating to

our clients about the newer drugs or the newer methods that could be used to eliminate or control the diseases.

People in the livestock industry, it seems to me, are extremely aware of the value of gaining knowledge and putting it in practice. And I think the flow is very, as Dr. Maurer described, from the veterinary laboratories and the colleges themselves to the veterinarian. Taking it from there, from the veterinarian to the client, the information flow is, in my judgment and my experience, excellent.

Mr. JOHNSON. Will the gentleman yield?

I think Colorado is very similar to the situation you had in Texas. We have our veterinarians and professors traveling all over the State all of the time giving different kinds of programs to the veterinarians and to the livestock people. I think the dissemination of the information is very good from what I have seen.

Dr. MAURER. If I could make one more brief point on that, you know, they say the fund of knowledge is doubling, literally, every 7 years, and because of this medicine in general has become very aware of the need to keep up. So I am sure that most veterinarian schools, and certainly this is true in Texas, have a continuing education program with courses being put on every month for veterinarians in the field, and courses being taught by faculty.

So there is no hangup in the flow of information because of these continuing education efforts.

Mr. BERGLAND. Thank you, Doctor.

Senator Smathers, I had a question to direct to you or to your associates.

I was told recently that there are more horses in the United States now than ever in the history of the country.

Is that true?

Mr. SMATHERS. Yes, sir. We state, and we think accurately, that there are more horses. Now, whether or not it is in the history of the country, I would have to yield to Dr. Maurer on that, but we know that there are more horses today than there were 20 years ago.

When the horse was no longer needed as an animal around the farm in terms of performing labor, naturally there was a dramatic decrease in the population of horses. However, in the past 10 years there has been a dramatic increase in the number of horses, and it has gone up, as a matter of fact, in the last 4 years something like 12 percent.

Mr. WALTON. May I comment on that, because we also have a vital interest in the horse industry, and I think the figure was as many as 19 million horses at the peak of the use of the horse as a power source which would have been at least 50 years ago, but it was as low as 2½ million in the 1950's. So that population has quadrupled since the 1950's, dramatically since 1960.

Mr. BERGLAND. Well I know how much comfort a pair of horses have brought to our family. We have a Tennessee Walker and a quarter horse and those two horses are regarded as members of the family by our sons. Not only is it a vital industry to the United States, but it certainly has brought much comfort and delight to our family.

Mrs. Stevens, yours is a very novel suggestion and one which has a great deal of merit. In this metropolitan area of Washington there are a large number of stray cats and dogs, and you are aware of the problems that grow out of this.

Do you know offhand if any work has been undertaken by anybody in this matter of birth control for animals?

Mrs. STEVENS. A very small amount has been, and actually probably Mr. Johnson knows that in Ft. Collins Dr. Lloyd Falkner is working, but even Dr. Falkner, who is one of the only people in the whole United States that is funded for this purpose, is out very actively seeking more funds because he is not able to carry on research for which he has very specific ideas and plans. It is just simply impossible, and with the figures that I will submit for the record, show in California over \$12 million a year is spent for the collection and destruction of animals, the great majority of which should not have been born in the first place.

There is obviously a need for pounds and shelters to restore lost animals to their owners if they have strayed away, and of course there will always be a few stray dogs which cannot be prevented, but obviously the numbers now are vastly greater than they should be, and the cost in suffering is horrible. The cost in money is extremely substantial, and Dr. Maurer was speaking of \$50 million, and that was large, but when you think what you are throwing away for absolutely nothing every day of the year in cities all over the United States, you can see that it would be far more practical to do the research and stop the suffering and the flow of money.

Mr. BERGLAND. Even if your proposition were to be measured in the cold hard light of economics, it would be a paying matter.

Mrs. STEVENS. Absolutely.

Mr. BERGLAND. To say nothing of attaching; a monetary value to the suffering of these creatures.

Mrs. STEVENS. That is right. Each one is having some horrible experience before he dies.

Mr. BERGLAND. Well, I commend you for proposing this very novel idea.

Mr. Chairman, that is all I have, and I am very firmly in support of this measure, and I hope it passes soon.

Mr. MELCHER. The gentleman from Idaho?

Mr. SYMMS. Thank you, Mr. Chairman. I just have one question and I will be brief.

As you know, I am cosponsor of the legislation and I am in favor of it, but I was interested by the question that Mr. Johnson of Colorado brought out about the effects of the Delaney amendment on the incentive that private companies now have, not only the Delaney amendment but the other authority which has been given to regulatory agencies, and I wonder, Dr. Maurer, if you would care to comment.

I have read some about the fact that low-cost drugs that are now not profitable items for drug companies to try to produce, you know, items such as penicillin and this type of thing, because in this day and age the penicillin would never be worth all that it would take to get it on the shelf.

I just wondered if you would comment on that.

Is that a true example?

Dr. MAURER. Yes, sir, that is true. I think it is very true, particularly in drugs which have very limited use in say, in one species, like in a horse. It has become necessary for many equine practitioners

to use drugs that were designed for human use simply because there are none that were designed for the horse and for a specific purpose, and the primary reason they are not available is because the drug companies cannot afford the expense of developing the drug and getting it through FDA for the amount of money that it envisioned for the horse industry. They need a drug that would sell to say humans or beef cattle or something of this sort for very wide use to justify the clearance for it. It is unfortunately true.

Mr. SYMMS. In other words, we have gotten ourselves into the position now, as Mr. McMillen pointed out, the harassment that the drug companies face, that they take just to spend the money in research in some areas, and now we are going to have to have the Government do the research.

Is this what you mean?

Dr. MAURER. Yes, sir; that is right unless they can see a sufficient economic return, they simply cannot afford to get a drug cleared.

Mr. SYMMS. Do you see any way that there would be any action that we could take in Congress that would alleviate this situation, that would be good and healthy for the industry and for the country?

Dr. MAURER. When you consider the amount of subsidy that has gone into crop production, for example, to subsidize some drugs to make it feasible for somebody to produce them when it is lifesaving and a vital drug to save the meat supply, then it would seem to me that it would justify our subsidy.

Now, this is a case that I mentioned. There is no drug in the United States that would eliminate babesiosis from cattle. And there was a good one that no longer is made because the drug companies could not afford to put it out, and here we are struggling for a new one now, which is less toxic; but whether or not they will get it cleared before we get an outbreak, I do not know.

Mr. SYMMS. Mr. McMillan, would you like to comment on that?

Mr. McMILLAN. Just to expand a little bit. The correlary here between human drug and an animal drug is quite important; at least the contacts I have had with various pharmaceutical houses. They tell me that often it is more difficult to get approval on what they call new drug application for an animal drug usage than it is for a human drug usage. So I do not think we should lose sight of the fact that there has to be a greater correlation—much of which was brought out in Mr. Jones' testimony—a greater correlation on animal and human disease research, because there is a straight parallel line, and one that is quite important to the overall animal protein producing industry.

Mr. SYMMS. Well, just to go further on that; I understand a person has to eat 817 pounds of beef liver to get the same amount of Diethylstilbestrol that a lady gets when she takes one morning-after birth control pill. Is that right?

Mr. McMILLAN. Approximately, but that is an awful lot of liver, too; humanly impossible, but there is another interesting one that perhaps is more graphic. It is one that more recently has been approved by the Food and Drug Administration, and this is the addition of selenium to animal feeds. Now, selenium is a natural occurring mineral. And they tell me if you get too much selenium, you can get cancer and if you do not get enough, you can get cancer.

Now, it is interesting that here is an absolutely necessary additive, because of a deficiency of selenium that is present in the soils in certain parts of the United States. And yet, the Food and Drug Administration in this case because of the Delaney clause held up the approval of selenium as a feed additive for 6 years, or perhaps more.

Recently, it has been approved. But here the feed companies in this case after all the research and development that they went through had to go through all of the pain, so to speak, and the length of time and the economic losses that took place in the livestock industry before they ever got approval for selenium as a feed additive.

It just underscores in a different respect the points that we have been making on the need for this bill, as a part of the total complex picture of animal disease research.

Mr. JONES. Mr. Symms, you have asked for a specific recommendation on whether Congress might start with corrective legislation, and probably of all the areas, no area is more grey and has caused more reluctance on the part of industry than the residue problem. So we would recommend that legislation to set up a scientific procedure for establishing safe residue levels in various compounds and substances, that this would be a good starting place, with bills already introduced in Congress that this would be the place that we recommend the Congress start the corrective legislation, because as long as we operate in this area of complete indecision based entirely on how refined our testing is, as to whether we have residue or do not have residue with no correlation to the deleterious effect of that substance.

I think you are going to continue to have a great reluctance on the part of industry to do the necessary research in these areas. So this is the area where we would recommend that Congress start.

Mr. SYMMS. Do you address it to the things such as the Delaney amendment?

Mr. JONES. The Delaney amendment would be involved; but even with other substances, we still do not have any real, clear cut legislative pattern. And if, going beyond the Delaney amendment even to other substances that would perhaps have no carcinogenic effect or potential at all, we think there needs to be a complete diversion to a scientifically based determination as far as residues of any sort are concerned.

Mr. SYMMS. Thank you.

No more questions, Mr. Chairman.

Mr. MELCHER. The gentleman from Missouri?

Mr. LITTON. In the interest of time and in view of the testimony we have had, which has been excellent, I do not have too many questions; just a couple.

I was interested in the doctor's comment in response to a question on animal research funds. He pointed out that the response often is if you can think up an angle relating to a problem of human health, we can easily get the money. I think perhaps from a practical standpoint, we are going to have to take that route if we are going to get this legislation passed. We are going to have to relate the benefits of the bill to an America that is mostly urban and getting more urban every day, as opposed to relating the benefits to agriculture.

So for the record, I have a couple of questions: One to Mr. McMillan. You mentioned something about 1 or 2 percent additional calves. How would we relate 2 percent more beef on the retail market

in terms of consumer prices; in other words, 2 percent more beef would do what to the retail price of beef?

Mr. McMILLAN. Well, it is difficult to get a straight line correlation, of course, on what effect there would be on consumer prices if we did have, say, 2 percent more beef in the meat shelves in the stores. But I think here we have got to consider that it would probably have an effect, a dampening effect, on consumer prices.

But what we are really trying, what we are really striving to achieve with animal disease research is to become more efficient in the production of that product; therefore, it would seem to me that there would probably be an offsetting effect. You may produce more beef which could affect, obviously, the supply, which could affect the price, but hopefully, this would be offset by greater productivity, more efficiency in the production of that beef, so that the net result would be about a straight line.

Mr. LITTON. We are dealing with inelasticity of demand. We hear that a 1-percent increase in food supply results in a 3- to 4-percent decrease in price of food.

Can we relate this to beef?

Mr. McMILLAN. Well, I think you have got the total available supply of red meat, because pork is competitive with beef and vice versa. Now, I think your figures are accurate, that generally speaking the economists do agree that 1 percent, in the past at least with the demand that we have had, 1 percent more increase will decrease the supply approximately, or would decrease the price.

Mr. LITTON. What I think we are talking about is more calves. You and I understand what we are talking about, but if we are going to sell legislation to urban America, I think we have to relate the benefits of the bill to the consumer, and what it is going to do for her when she goes to buy meat at the supermarket.

Now, if we can do that in the record somehow, some way, the chances of passage of this bill, I think, will have been greatly enhanced.

Mr. McMILLAN. We might approach it in this way, Mr. Litton, and that is that you can assume that you are going to have an escalating population, a human population growth. Now, in order to maintain per capita consumption, you also have to have escalating production of beef even to hold prices at a flat level; at most it may be modest increases.

And here we are talking about an efficiency built in to produce more beef, to keep pace with the human population growth is the point I was trying to bring out in my initial testimony.

Mr. LITTON. I have had many discussions with consumers in the last 10 months, and it seems that no matter what I say, their immediate response is yes, but what effect does that have on the price of the groceries I buy. And it does not really matter what I say, what the facts are, what the figures are, what the percentage is, how many calves are produced or how much less it costs us to produce them; they continue to come back and say, fine, but what effect does that have on the price I pay for groceries.

I really think if we can relate some of this to that which they are most interested in, the price of groceries, it will be a lot easier for other Members of Congress to look favorably on this kind of expenditure.

I have question for Dr. Walton. We have had talk about balance of payments. You were talking about exporting products that are in plentiful supply here.

One of those things we have plenty of in your industry, artificial insemination, is frozen semen. If we were to find, not necessarily a control or a cure for Bluetongue, as you mentioned in your testimony, but simply a means by which we could identify those animals that have that disease, or are carriers of that disease, how much would that increase, on a yearly basis, our export of your product?

Dr. WALTON. That is perhaps a difficult figure to come up with. We are talking primarily about the market in New Zealand and Australia which—the market there, there is about 12 million beef cattle in those two countries. We are talking about potentially an export of our share of the market, perhaps a million ampules a year would be a round figure we might talk about developing.

We are talking about something, say, on the magnitude of \$4 or \$5 million in semen exports, but I think there is a much better one even than the semen exports, which we need to recognize. Today, there is a tremendous demand for the livestock that has been developed in this country, both the semen and the live animals.

Now, there is a tremendous export market for those animals and for that semen; not only must the stock be superior, but we must operate from the position of strength regarding the health programs in this country. So in addition to what Dr. Maurer has pointed out, regarding our own self-protection for these diseases coming in and our ability to help those countries control diseases for the goodwill and other things that come from that, but being able to have our own exports clean opens up doors to export markets.

We find that many times our biggest problem is getting through the red tape, such as the Blue Comb one, which you have been a tremendous help in, by getting through the red tape and getting recognition that we are on a safe ground for that disease or other diseases. So in the long run strengthening our position on our livestock disease control method in this country strengthens our export potential.

And that export potential is tremendous today, and it will be for the next decade if we can keep ahead, as Dr. Maurer said, keep ahead and not fall behind the research in other countries on that subject. The dollars are real and the potential is very real.

Mr. LITTON. That is just as good. The point I was making is that we are going to have to export some farming commodities, obviously, if we are going to buy the energy we must have. If we are going to reverse our balance of trade deficits, reverse our balance of payments and stabilize the dollar, we are going to have to export something.

Some of the things we are talking about here that we could export are large in terms of dollars, but not large in terms of food that the American consumer would eat. In other words, \$10 million in the area of breeding stock or semen, as opposed to \$10 million in food. We could make a greater gain in terms of balance of trade deficit without hindering the food supply or the consumer here. That was my point.

Dr. WALTON. That is correct.

Mr. LITTON. I have no other questions except to say that I do give full support to the bill, and I hope we can get it passed soon.

Mr. MELCHER. The gentleman from Iowa, one of the ranking members of this committee.

Mr. MAYNE. Thank you, Mr. Chairman.

I certainly agree with Congressman Litton that more efficient beef production, which can result from this bill, is one of the best arguments that we will have on the floor to get sufficient support. And as one of the sponsors of the bill, I was originally persuaded of the need of it by such things as the relatively poor reproductive performance that was mentioned by Mr. McMillan in his testimony.

Mr. McMillan, you say that the reproductive rate now is less than 0.8 of a calf per cow per year. Now, I am familiar with what is being done in the land-grant colleges in the way of research on this. I met with representatives of their research departments, on what they are doing to try to increase this productivity, and I am also familiar in a general way with what the Department of Agriculture is doing.

But I wonder if you could tell us what the industry has been doing to increase this productivity, which of course would have a very major impact on the efficiency of beef production, if we have that rate increased just a little.

Mr. McMILLAN. There are a number of things, Mr. Mayne, that the industry has been doing in order to up the number of calves per cow. We do a great deal more pregnancy testing, for example, that is a very simple one, but it is now widely used within the industry; whereas a few years ago, it was very seldom used.

Obviously, there is the use of testing techniques to determine whether or not a cow has brucellosis, which has been a longstanding program of the Department of Agriculture in brucellosis eradication; that being a disease that does cause calves to abort, and better selection of cows for their ability to breed; the list could go on and on and on in this regard.

But there nevertheless are some specific diseases, reproductive diseases, that we call them, that we do not really have the answer to yet. This is why we put emphasis in our prepared statement on the need for additional research to find answers to these other problems that we have that are management problems, but we have not been able to cope with them as management problems, such as we have done with pregnancy testing and this type of thing.

Mr. MAYNE. Well, could you give the committee some idea of the financial commitment of the industry thus far to this matter of increasing the productivity?

Mr. McMILLAN. Financial commitment, you mean in terms of the amount of industry money that has gone into research to find solutions to this?

Mr. MAYNE. Yes; I would like to have some idea of what the cattle industry is contributing to the solution of this problem. I think we have a pretty good idea of what has been done in the academic sphere in the land-grant colleges, and what has been done in the Department of Agriculture, but I take it we are being asked by the industry to put substantial Federal funds into this.

And I was just curious to know what the industry has done to help itself in this regard.

Mr. McMILLAN. I do not believe I can give you the answer today, Mr. Mayne, but I will be delighted to submit something later on for the record in order to develop the figure that I would feel to be meaningful.

Mr. MAYNE. Thank you.

And thank you, Mr. Chairman.

Mr. MELCHER. The gentleman from Louisiana says no questions. The gentleman from North Carolina?

Mr. JONES. No questions.

Mr. MELCHER. The gentleman from Kansas?

Mr. SEBELIUS. No questions.

Mr. MELCHER. Thank you gentlemen very much.

The subcommittee will remain in session. It is an open session, so you are welcome to stay.

[Whereupon, at 11:55 a.m., the committee proceeded to other business.]

[The following statements and letters were also submitted to the subcommittee:]

STATEMENT OF HON. ANCHER NELSON, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF MINNESOTA

Mr. Chairman, I want to thank the Livestock and Grains Subcommittee for allowing me this opportunity to express my position on several bills pertaining to research in veterinary medicine, including H.R. 9554 which I am co-sponsoring. In addition, I want you to know that your efforts in scheduling these hearings are appreciated by many of us who recognize the potential of veterinary medicine for contributions to our nation's health and agricultural productivity.

With the increased world demand for animal protein every effort must be made to improve the efficiency of livestock and poultry production in the United States. In order to accomplish this goal animal agriculture must more effectively improve the efficiency of converting plant protein into animal and poultry products such as meat, milk and eggs. Healthy livestock and poultry will perform at their maximum potential only in a healthful environment.

I've had a long-time association with the dairy industry and I've seen the disastrous effects of diseases such as bovine tuberculosis and brucellosis on dairy herds in Minnesota. Veterinary research activities provided the means to bring these diseases under control and practically eliminate them as a threat to the health of man as well as to the dairy herds. This has been accomplished over a period of many years. Unfortunately, there are constantly emerging new problems and as we control one, two more often take its place. We have only scratched the surface in improving the health and productivity of our livestock herds and poultry flocks. Thus, it is so essential that increased support for animal health research be provided. The bills under consideration before this subcommittee will be very helpful in providing increased federal support for animal health research at the state level.

As many of you well know, I've had a keen interest in legislation to provide federal support for the veterinary colleges in America. Minnesota has been in the process of developing an outstanding veterinary college since 1947 to take care of the need for more practicing veterinarians. The interest of young people in veterinary medicine is very high. The next step in the long-range development of the veterinary medical institutions and departments of veterinary science is to increase their capacity in veterinary medical research. Increased research funds for animal health need to be provided to utilize the talents at the state level that will provide information for the entire livestock and poultry industries of this country.

The value of the livestock industry in Minnesota was estimated at \$1,305,000,000 in 1972 and the cash farm income generated from the sale of livestock and livestock products was \$1,563,993,000. The annual loss from disease and parasites in Minnesota is estimated at \$130 million. Currently the federal government, through Hatch and Regional Research funds, is investing a total of \$46,141 in animal health research in Minnesota. State funds provide an additional \$150,000, while industry and production groups generate an additional \$100,000.

The estimated annual losses plus the loss of potential food from disease and parasites are an intolerable waste of natural resources. Because of the slow down in support of agricultural research in the past decade, some educators have indicated that the farmer has used up the bank of agricultural scientific

information and there is real need to accelerate agricultural research to provide solutions to the pressing farm production problems. Mastitis in dairy cattle is still one of the most costly problems to the dairy industry. Respiratory and enteric infections also reduce the productivity of affected herds. Reproductive disorders are extremely costly in affecting the maximum reproductive capacity of cattle, swine and sheep. There are newly emerging problems that join the existing problems constantly. Thus there is ever-increasing need for animal health research out at the firing line at the state level.

STATEMENT OF HON. HAROLD T. (BIZZ) JOHNSON A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF CALIFORNIA

Mr. Chairman, I come before you today in support of legislation which would bolster research in the field of animal health. You have proposals under consideration which would create an Animal Health Research Act. I wholeheartedly endorse this type of legislation.

Animal health research is of particular importance to California, because the farmers and ranchers of our State maintain a significant number of animals in all categories. The California livestock and poultry industries represent a \$2.3 billion a year resource. Over 400,000 horses are now counted among the California equine population, one of the largest counts in the nation. We have also had rapid increases in the number of other animals in the State; thus the need for additional health research services.

Present support for veterinary research in all classes of animals can be characterized as non-existent or inadequate. While funds for livestock and poultry disease research is available from agricultural sources, it is far from sufficient. The plight of equine research, companion animal research, and research on other classes of animals is indeed grave. We are unable to solve the pressing production problems and are threatened by diseases from foreign sources. Investigations of the diseases of animals are lacking adequate funding in California and across our country.

Passage of the Animal Health Research Act is extremely important to the well being of this nation. It would funnel much needed monies into programs of research on animal diseases important to the health and welfare of America for which there is currently no hope for sufficient funds. Under this proposed legislation, programs could be conducted to investigate the threats to the food producing livestock and poultry industries; to do research on diseases of horses, dogs, cats and other pet and companion animals so important to our society; to develop ways to deal with health problems of wildlife, fish, and sea mammals, as well as animals now in zoos and expositions; and finally to expand programs involving many species in the all-important field of biomedical research.

Mr. Chairman, the legislation provides the mechanism to bring new medical miracles to the veterinary sciences. You, I am sure, are well aware of the great need to maintain our agricultural and livestock production in the decade ahead. This is one concrete example of what the Congress can do to insure that America's production will not slacken. I commend you for holding these hearings and urge you to give this legislation your expeditious consideration.

STATEMENT OF HON. WILLIAM J. SCHERLE, A REPRESENTATIVE IN CONGRESS FROM
THE STATE OF IOWA

Both as a farmer and a member of the Agriculture Environmental and Consumer Protection Subcommittee, I wish to support H.R. 3286, similar to H.R. 1683 which I have introduced. This bill is vital for the best interest of beef, poultry, egg and dairy production industries which are essential in assuring the nation of an adequate food supply.

We have heard testimony from leaders in all these industries which points to the necessity of immediate action in the area of animal disease research. A representative of the poultry producing association has stated that this industry has grown immensely in the past two decades, and it has been possible because of improved methods of disease control. Without effective research, the poultry industry could have been destroyed by the outbreak of Newcastle disease.

The vast number of cattle that died from shipping fever in 1972 indicates that research must be improved so we can cut down on these losses which affect

not just the industry, but the consumer as well. As for our livestock population, we must act now to prevent disease from gaining entrance into our country, not wait until the problem is here.

The consumer will profit from this legislation not only because it would bring about increased production, but also because it would help diseases which may be transmitted to man.

AMERICAN FARM BUREAU FEDERATION,
Washington, D.C., November 12, 1973.

Re H.R. 3286—Animal Health Research Act

HON. THOMAS S. FOLEY,

*Chairman, Subcommittee on Livestock and Grains, Committee on Agriculture,
U.S. House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: The American Farm Bureau Federation is very much interested in H.R. 3286—the Animal Health Research Act. This is legislation to authorize the Secretary of Agriculture to assist the states in carrying out a program of animal health research by providing federal funds to all accredited colleges of veterinary medicine and departments of veterinary science or animal pathology conducting animal health research in the state agricultural experiment stations.

The AFBF Board of Directors, at their September meeting, considered this legislation and went on record in support of its passage.

Farm Bureau recognizes the need for increasing the extent and effectiveness of research being carried on in the animal health field. This legislation would contribute to this objective. However, we are hopeful that the major emphasis will be on research directed toward the needs of commercial agriculture.

We urge that the Subcommittee favorably report this legislation at an early date.

We should appreciate this letter being made a part of the hearing record.

Sincerely yours,

CLIFFORD G. MCINTIRE,
Legislative Director.

STATEMENT OF SHERMAN O. KESSLER, NEW ROSS, INDIANA

I support the enactment of the proposed legislation, H.R. 3286.

1. As Chairman of the Indiana Hog Cholera Eradication Committee since October 1959, I have observed how combining research information with industry-wide efforts and with concentrated federal and state regulatory work, can eradicate a major costly disease—hog cholera. The resulting estimated 50 million dollars a year savings from this accrues to swine producers to some degree, yes, but much accrues to consumers and to the general public in lower cost pork—and in resources, used before to control the disease, being made available for other constructive uses.

2. As Chairman of the Legislative Committee of the Indiana Livestock Breeders' Association, I concur with the statement giving the back-ground of the need for this legislation, made by Senator Talmadge when this bill was introduced in the Senate.

Further, in discussing this with Walter Woods, Animal Science Department Head at Purdue, health problems in production animal agriculture were emphasized in the light of some relatively recent developments:

(a) Reproductive problems have increased in dairy and swine herds by going to intensive management and confinement systems.

(b) Losses in beef cattle, feeder pigs and young dairy calves because of "stress" during and following shipment makes this one of the major economic losses in the livestock industry.

(c) The so-called sudden death syndrome in ruminants seem to be associated with high concentrate feeding.

So if livestock production is to expand to meet increased demand for food, these problems and others need solving.

(Also, I am submitting to this committee, as part of the testimony supporting H.R. 3286, a copy of a letter, dated November 6, 1973, addressed to me, written and signed by Walter Woods, Head of the Animal Science Department, Purdue University.)

3. As a trustee of Purdue University, I can vouch for the abilities of the administrative staff and the research faculty to capably, constructively and profitably use the funds that would be allocated to them with this legislation.

Also, the stated objective of Dean Jack Stockton of the School of Veterinary Science and Medicine, to emphasize food animal medicine, is noteworthy in my opinion.

Further, I have great confidence in what might be termed the animal health research fraternity. Those who have and are producing results are tremendously capable. They are very knowledgeable in the use of the scientific method but also follow thru to practical application. They are also most generous in exchanging information in the many ways available to them.

4. Regarding my support of this bill as a farmer. I have been farming for thirty years, most of that time in partnership with my brother, Warner Kessler. Our farm is in Montgomery County, Indiana, one of the leading livestock counties in Indiana and in the United States. So far in 1973, from our farm we have sold 686 head of cattle for a gross amount of \$328,760.98, and 1612 head of hogs for a gross amount of \$139,936.30. Also, so far in 1973, we have paid the rendering company \$87.00 for 29 trips to our farm to pick up dead animals, including 20 steers. In addition, we have paid veterinarians \$3,346.33 to maintain as high a level of health in our livestock as we can.

A major part of the job of operating and managing this farm is inspection of animals for poor health symptoms—whether these be disease, injury, parasites, nutrition problems, or whatever.

So, you can see we have a vital interest in improved animal health—I believe H.R. 3286 will be helpful in this regard.

5. Credit risks in livestock production :

A lower incidence of health related livestock losses would be a tremendous incentive not only for farmers from a production standpoint to attempt increases, but for the channeling of other needed resources into animal agriculture to get the job done. Credit needs for facilities, commercial feeds, etc. will be increased.

As a director of the First National Bank and Trust Company, Crawfordsville, Indiana, with branches in three Montgomery County towns, I note that 14 percent of our commercial loans are farm loans.

The potential for increased credit use to expand livestock production in this county is tremendous. For instance, the use of feed grains now shipped from the county for livestock that might be fed within the county would realize perhaps a 50% increase. A like potential exists in many areas, I believe.

All I have said here is intended to be in support of H.R. 3286. In closing, I would point out that there are optimum conditions in which livestock producers on the farm do their best job. I have written a paper which I titled "Nobody's Peasant—A Position Paper—Livestock Farmers—U.S.A." I believe it to be a vigorous statement supporting the competitive market, individual enterprise and an incentive oriented economy. Also, reasonable expectations from governmental actions are in order, I believe.

Livestock farmers welcome government as a partner in their industry when it encourages these characteristics. Perhaps the disruptions and losses caused by meat ceilings and the losses caused by the totally unrealistic banning of the use of DES in cattle feeding would be compensated for to some degree by the passage of H.R. 3286.

SHERMAN O. KESSLER.

PURDUE UNIVERSITY,
SCHOOL OF AGRICULTURE,

West Lafayette, Ind., November 6, 1973.

Mr. SHERMAN O. KESSLER,
Route 1,
New Ross, Ind.

DEAR SHERMAN : The production of meat, milk and eggs for today's consumer has recently gained attention and raised the question if technology and capability are here today to meet tomorrow's demand. There are many areas where we need more technology, but specifically, one area is that of animal diseases. I would like to emphasize the following areas that fall into animal health, although not entirely within the School of Veterinary Medicine research or extension programs. Animal Science Departments as well as Veterinary Schools have actively researched and extended information on these problems. I am listing several areas of health related problems facing the livestock producer today.

(1) *Reproductive efficiency*—Reproduction problems have increased in dairy and swine herds by going to intensive management and confinement systems in an attempt to save labor and increase efficiency. Thus, this becomes an example of where problems have been created for reproductive efficiency by taking recommended steps in another area of the total management scheme. If we are going to expand food (meat and milk) production in this country in a competitive and profitable manner, improving reproductive efficiency in swine, beef cattle and dairy cattle must become one of our major thrusts. The impact of one more pig per litter or a 5% increase in calf crop, on economic returns is very obvious. The reduction of the average interval between calves in the dairy herd, which now exceeds a year, would obviously be of economic benefit to the dairy producer.

(2) *Losses due to stress*—Losses in beef cattle, feeder pigs and young dairy calves because of "stress" during and following shipment makes this one of the major economic losses in the livestock industry.

(3) *Mineral problems*—Grass tetany for example is a major problem in many states and is a problem in Southern Indiana. Many management factors as well as a possible magnesium deficiency contribute to the complexity of the problem.

(4) *Health related to confinement house environment*—There are questions being raised today on the impact that gases produced from oxidation ditches, etc. have on animals in closed houses.

(5) *Internal and external parasites of animals*—

(6) *Stresses associated with feeding high grain rations*—High concentrate feeding has brought an increase in sudden death in feed lots as well as increased problems with digestive problems in dairy cattle. The specific economic loss is the increased loss of high producing cows from the dairy herd when they are fed high concentrate rations as compared to higher roughage rations.

The previous six areas are only part of the health related problems facing livestock and poultry production today. A concentrated effort is going to be required to find effective solutions to these problems as well as others.

The concept that is important I feel to develop is that, as animal units increase in size as well as greater animal stress developing from the effort to maximize performance, problems in herd health have increased. Examples of problems from stress associated with confinement and animal movement, as well as feeding programs, have been given previously. Also, with the growing world demand for animal products then it is necessary to have more effective disease control and health programs in order to permit the production of animals to meet the apparent increased demand for meat, milk and eggs. Disease and health related problems as well as many other problem areas (nutrition, genetics, engineering, etc.) require solving before the potential for efficient livestock and poultry production can be fully realized. The livestock and poultry industry in Indiana has been the largest source of agricultural income in the state and as growth in number of livestock and poultry, as well as size of units occur, the problems of animal health will increase.

Many disease cost estimates probably grossly under-estimate the loss to the industry. For example, the loss to the dairy industry from mastitis and reproductive inefficiency is estimated to be one billion dollars. This probably is the estimate due to direct loss of the animal or total production and does not include the losses represented by increased intervals between calving, increased services per conception, reduced milk production in one or more quarters, etc. The losses due to death or total loss of production is great but more important to many operations is the reduced performance or production due to health related problems. The net effect may be a loss several times greater than that realized directly by death or total loss of production.

I would be glad to supply to you additional specific information if it would be helpful to you.

Sincerely yours,

WALTER WOODS,
Head of Department.

OUR NATIONAL NEED FOR RESEARCH ON DISEASES OF SWINE

Nearly everyone eats ham, bacon, pork cuts, and sausage. These food products from swine raised in every state in the nation comprise an important part of our national diet. The value of the investment in the pork producing industry

is of such order as to be an easily recognized significant part of our national enterprise. It must be protected. Pork must continue to be available to our citizens at a reasonable price. The cost of producing pork is rising steadily. There are three main factors in the cost of production according to a University of Illinois study covering the records of 2000 swine producers over a 20-year period. One is the cost of corn, a second is the cost of supplement, and a third is the cost of everything else (rent, labor, equipment, veterinarian's fees, taxes, health aids, etc.) including management. The cost of 'everything else' has been rising at a rate of about 1 cent per month per 100 pounds of pork produced since 1952. Management is one of the most crucial elements in production costs because diseases of swine cannot be reasonably controlled by the unskilled. Skilled management is required for success. Efficient production, as a concept, assumes that there are effective reasonable means of controlling diseases. In the broiler chicken industry, for example, satisfactory disease control measures have made efficient production possible with the result that 1 pound of chicken costs only 30 cents at retail. If the pork producers are to reduce costs significantly, disease-caused losses must be made less related to skilled (expensive) management. This particular feature has recently been accentuated by the rulings of the FDA as a result of the Commissioners Task Force report in response to the Swann report in England. The effective result of the rulings are restrictions on the use of antibiotics in swine feeds as growth promoting factors. Many have used antibiotics to suppress low grade enteric and respiratory problems. In the future, even more reliance on skilled management will be required to avoid lowered rates of growth due to respiratory and enteric diseases and higher rates of mortality among young pigs.

An unreasonably small amount of money is being spent on swine disease research in relation to the value of the industry, its importance to the national well being, and in relation to the disease problems facing it. In 1972, at commercial slaughter were 85 million swine averaging close to 240 pounds each at an average price of 27 cents per pound for a total of \$64.80 per animal making a grand total of 5.5 billion dollars paid to the producer. By the time it reached the retail counter each pound of pork averaged 79 cents per pound. The shocking fact is that the ARS of the USDA is spending about \$250,000 annually for swine disease research in extramural programs, of 4/100,000 of the value of just the commercial slaughter value for 1972. How can we as a nation justify such a pittance for disease research when the housewife has to face increasing prices with little hope for real production cost efficiencies because of it?

In a recent survey conducted by the National Advisory Committee on Swine Dysentery of Livestock Conservation Inc. random computerized sampling procedures of 250,000 swine producers revealed that the loss to producers because of this disease in 1971 was \$50,000,000. Current reports give encouragement that reasonable success will be achieved in finding the cause and providing drugs with which to control the disease at a reasonable cost.

The most devastating disease of baby pigs, transmissible gastroenteritis, still remains without satisfactory means of control. In every survey of swine diseases TGE is at or near the top of the list of those causing the most severe losses.

With confinement rearing of swine becoming a part of the effort to raise great numbers under the same management, a new syndrome has appeared. Market hogs die while being loaded for shipment or are found to have died on the way without apparent cause. Much needs to be done on this problem, as virtually nothing is known which would lead to effective elimination of it.

There are many disease problems affecting the respiratory, digestive, and reproductive tracts which cause losses on the farm and are receiving very little attention. Among these are the mastitis-metritis syndrome, leptospirosis, mycoplasma pneumonia, influenza, colibacillosis, and brucellosis.

It is in the national interest to provide public funds to develop knowledge for the control of diseases of swine so that production can become less complicated, to make orderly large scale production possible, and to make pork products available at a reasonable retail price.

D. P. GUSTAFSON, D.V.M., Ph. D.,
Professor of Virology.

PURDUE UNIVERSITY,
SCHOOL OF VETERINARY SCIENCE AND MEDICINE,
Lafayette, Ind., October 3, 1973.

HON. JOHN T. MYERS, M.C.,
U. S. House of Representatives,
Cannon House Office Building,
Washington, D.C.

DEAR JOHN: Sherman Kessler has informed me that comments on the so-called Animal Health Research Act or S. 1388 and H.R. 3286 would be of interest to you.

The basic idea of such an Act meets a long standing need, I am sure you would agree, and should be encouraged and pursued to fruition. Oddly enough, having been aware, as a spectator might be, of its genesis and form since the development of the idea, the bill has always been difficult to admire for its approach to the problem.

The formula for distribution seems to be one which pleases the political necessities and the administrative mentality but not the research minds that are expected ultimately to make this effort an admirably effective venture in the public interest. Any formula which avoids peer group review of proposals for research support tips the scales heavily toward all those negative values everyone says are to be abhorred. Having said that, perhaps some more pragmatic suggestions can be made. I will not bother to provide a new formula totally since it is my forlorn guess that the bill is too far "down the pipe" for changes of the first order.

Some suggestions and the rationale for them are:

1. The Veterinary Medical Science Research Board should be composed of active senior research scientists selected from nominees two-thirds of whom are from veterinary colleges or schools and one-third of whom are from veterinary science departments of Agricultural Experiment Stations in states where there is no veterinary college or school. This group will be appointed for staggered terms of 3 to 5 year tours. It will select for each discipline of research named by the Secretary outstanding bench scientists to assist in evaluating research capacities of recipient institutions. The terms of office of members of these groups shall be staggered and of 3-5 years duration.

Rationale: The representatives of national livestock and poultry programs are omitted because their experience does not permit them to contribute meaningfully in deciding on the research capacity of an eligible institution. They can contribute by presenting what seem to them to be priority areas of research need. This they may do through channels presently available. Veterinary Science Department representation was reduced because there are so few in those states not having a veterinary school that are strong enough to provide equivalent value to the decisions.

Senior research scientists should be the group capable of deciding, with the help of the section scientists, the level of capability of the divisions of medical science in various institutions. It divides the responsibility and provides checks on seniority power.

2. The system of awards based on research capacity should be based on a rating system. The amount of award per unit of rating to be determined annually by the Secretary.

Rationale: If the system is based on proportion of total available dollars as now implied in S. 1388 then no institution can improve its capacity without that it be done at the expense of another institution. Administrators are unlikely to take kindly to the proposition that their proportion will be smaller because their sister institution's capacity has improved, even though their total dollars cannot be reduced (Sec. 4 (b) 6; p. 6, 1. 15-19. S. 1388). One way to make the competition more appealing is to provide the system without the proportion-of-a-whole connotation.

3. The awards based on livestock value in a state should be reduced from 48 percent to 20 percent. Horses should be omitted from the base for calculations.

Rationale: Omitting horses from the base, Table I based on Tables II, III, IV, and V reveals that for every \$1000.00 given Texas, Alaska & R.I. receive \$1.00, Delaware and N.H. receive \$6.60 and the median state Wyoming receives \$135.00. The third ranking state Nebraska receives about \$500.00. Somehow giving half the money to institutions on this basis seems an unfortunate distortion especially when the objective is to support research in animal diseases.

Horses should be omitted from the base—(not from research project programs funded by this Act) used to calculate the amounts due eligible institutions because it throws a remarkable skew into the base. I saw a horse in Kentucky which was purchased for 18 million dollars on the Spendthrift farm outside Lexington, Ky. There are about 90,000 horses in Los Angeles, California—at \$200 apiece they would equal the stallion in Kentucky. There is such a wide range of value for horses that it should be omitted. We can buy horses for research at less than \$50 each. I saw 350 brood mares at Castleton Farms near Lexington, Kentucky worth not less than \$1000 each. The skew would distort the livestock value in those states having thoroughbred and pacer-trotter breeding farms—such as Kentucky, New York, Pennsylvania, Illinois, Maryland, Virginia, California and Texas.

If you plot the curve from Texas to Alaska, you will surely see the remarkable distortion of fund allocation that will occur; for example, one quarter of the funds would go to 3 states, and one half distributed on this basis will go to ten states. See Table I. To reduce the effect of this distortion the suggestion to reduce the percentage of funds allocated in this manner has been suggested.

4. The awards made under Sec. 5 should be deleted.

Rationale: This money is to be allocated by the Secretary for research on national or regional problems and the amounts are to be negotiated with eligible institutions. It is believed that all animal health research problems are either regional or national in scope. This is one reaction. On the other hand, if the awards under Sec. 4 were eliminated then the Secretary could set up a peer group review system and allocate all the funds under Sec. 5. Why both avenues or systems are useful may be visible only to politicians.

5. Funds to be awarded under Sec. 6 should be included under Sec. 4.

Rationale: The difference between Sec. 6 and Sec. 4 facilities money allocation systems is that under Sec. 6 it appears that new construction can be paid for in addition to the situation in Sec. 4 under which money can be allocated for alternation or renovation of facilities. The back door in Sec. 6 is that the Secretary may meet specific national or regional needs directly without Sec. 4(b) formula requirements. It is believed that all needs for research facility construction or renovation will be based on national or regional needs. The questions of definition seem very important.

In a consideration similar to that in Suggestion 4, it might be argued that all funds for construction, renovation, or alteration of facilities be allocated under Sec. 6 on the basis of demonstration of the worthiness of the request to the Secretary from the eligible institutions.

Thank you for your interest in this effort. I believe the public will be better served by making the money go where it will be well spent rather than trying to devise a means to split up the melon on some superficial basis. If I had my way it would be allocated to the researcher on the basis of a research proposal in the fashion of NIH.

Yours very truly,

DONALD P. GUSTAFSON, DVM, Ph. D.,

Professor of Virology.

NOVEMBER 8, 1973.

Hon. JOHN T. MYERS, M.C.,
U.S. House of Representatives,
Cannon House Office Building, Washington, D.C.

DEAR JOHN: Many thanks for your letter of October 19, 1973, regarding the proposed legislation H.R. 3286 and S. 1388, the Animal Health Research Act.

Since having written to you on October 3, 1973, I have learned that for purposes of establishing the base for distribution of funds related to the value of livestock and poultry, horses will be assigned a value (I think it is \$435.00 each). This is, of course, quite different from the language of the bill, and needs to be considered as it will be proposed. Accordingly I am enclosing an unofficial equine population count as published in the June 15, 1972 issue of the Journal of the American Veterinary Medical Association. Furthermore, having used \$435.00 as the value for each horse, I have enclosed a ranking of the states based on the value of livestock and poultry including horses, which you may compare with the ranking sent to you on October 3, 1973, excluding horses. Of course, I do not know what figures might be used to actually find the rankings but I would guess that the

rankings and the values obtained here are not far enough off to change matters, from either a practical or a philosophical point of view. As you may observe—the characteristic of the curve is not altered much with horses or without them. It changes the position of some states on the curve.

Otherwise, on a clearly second order plane, I find only one additional thought. With regard to the 4% for administration, this seems to be something that could be more flexible. This is based on the recognition that it probably costs no more to administer \$20,000,000 than it does \$15,000,000 and yet there is \$200,000 difference if a straight 4% is maintained.

Having been told that the House hearings are scheduled for November 13, it is hoped that this will reach you in time, for your consideration.

With kind regards.

Yours very truly,

D. P. GUSTAFSON, D.V.M., Ph. D.,
Professor of Virology.

ANIMAL HEALTH INSTITUTE,
Washington, D.C., November 27, 1973.

HON. THOMAS S. FOLEY,

Chairman, Subcommittee on Livestock and Grains, Committee on Agriculture,
U.S. House of Representatives, Washington, D.C.

DEAR MR. FOLEY: As you know, the Animal Health Institute is the national trade association representing manufacturers of animal health and nutrition products. This letter, which we submit for inclusion in the record of your hearings on H.R. 3286, is to express AHI's enthusiastic support of that bill, "the Animal Health Research Act," which would authorize the Secretary of Agriculture to encourage and assist States in carrying out a program of animal health research.

AHI is generally in accord with the positions taken before your Subcommittee by the American Veterinary Medical Association, and the American National Cattlemen's Association, whose members are primary users of our products. While each AHI member firm has its own research component, and each contributes to the common goal of improving the quality and abundance of American foodstuffs derived from animals, we recognize that animal health research must also be encourage with government support if our nation is to be adequately supplied with animal protein. Such research is also vital to the welfare of horses, pets and other non-food animals, and it has a demonstrated capability to contribute to the armamentarium of human medicine.

H.R. 3286 would authorize the allocation of Federal funds to colleges of veterinary medicine and other appropriate state institutions to conduct research into animal diseases, their prevention and treatment. It would also authorize Federal support for construction of research facilities at the designated State institutions. The Secretary of Agriculture would appoint a Veterinary Medicine Science Research Board to assist him in setting animal health research priorities.

AHI respectfully suggests that there are two types of animal health research which should receive priority under any such program authorized by the Congress.

First, basic research is probably the most suitable animal health area for Federally—supported research at state institutions. By "basic research" we mean studies which are not aimed at the development of specific new products but at the achievement of enhanced understanding of the animal species, their physiological mechanisms, and the diseases which afflict them. Acceleration of such research is vital, but it is often impossible to justify within the strictures of private enterprise budgeting. The costs of developing and marketing new animal health products have risen drastically over the past decade. Such increases are certain to continue, due in large part to more stringent government requirements stemming from heightened concerns about environmental and consumer protection.

The second area in which we feel that Federal-state animal health research could be most useful is in the application of existing products to minor species, those which occur in relatively small numbers. This is an area also in which our industry often finds itself unable to justify the necessary magnitude of expenditure.

For the reasons stated above, AHI urges the Congress to direct that, under any program of Federal assistance authorized by the "Animal Health Research Act," strong emphasis be given to basic research and to minor animal species.

Whether it is supported by the government or the private sector, the search for safer, more effective methods of protecting the health of our nation's animals must be accelerated. We commend you for giving consideration to H.R. 3286 and we hope that your Committee will see fit to incorporate our suggestions and that the bill will be reported favorable and enacted into law.

Very sincerely yours,

FRED H. HOLT,
Executive Vice President.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY,
Blacksburg, Va., November 15, 1973.

HON. G. WILLIAM WHITEHURST,
*Congress of the United States, Cannon Building,
Washington, D.C.*

DEAR BILL: Thank you so much for your good letter of November 5 concerning H.R. 3286, to authorize the Secretary of Agriculture to encourage and assist the several States in carrying out a program of animal health research.

I appreciate the opportunity to comment on the bill and to express my strong support of it. As you know, the need for improved veterinary services in this country is greater now than ever before, because of the large increase in the numbers of companion animals, in addition to the needs of food animals. This bill will meet that need, and I am delighted you are supporting it.

There is no question that there is insufficient research information on disease control, parasite control, nutrition, and general care of animals. This bill would be invaluable in increasing research in these areas. In addition, as you know, all of the States have very good means for disseminating information that would result from this research.

I hope this letter of strong support of the bill will be made a part of the hearings record.

With warmest personal regards, I am

Sincerely,

T. MARSHALL HAHN, Jr.,
President.

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