

Dr. PRITCHARD. The veterinarian is the member of the health team that deals with diseases of all kinds of animals except people, and in this way he makes significant contributions to human health, and I want to point out one quite unique way that this is done.

As you know, a great deal of research on human diseases must be done with animals. This is fine and it presents no problems if the disease can be reproduced in animals. However, there are hundreds of diseases, particularly the chronic and debilitating diseases, that cannot be reproduced, so there is no way to do research on causes, mechanisms by which the disease is produced, or prevention unless people are used.

It is becoming increasingly clear however that most if not all of these diseases occur naturally in some animal species. Consequently the veterinarian in his daily work, whether it be with livestock, pets, zoo animals, laboratory animals or any other kind of animal, is in a position to locate for medical science these animal disease models that are so important for medical research. And I emphasize that he does this in his daily activity as a veterinarian.

I would like to mention very briefly one or two of these models that are being used at our school. The first one is pulmonary emphysema, which is one of the most important diseases of people today. In fact I believe one out of every 14 people on social security disability payments actually have emphysema. Fortunately, this disease also occurs in horses, and veterinarians working in our school have learned a lot about the mechanisms by which this disease is produced in horses, have been able to reproduce it, and are now using the horse on studies on the cause of emphysema. They actually house groups of horses and also monkeys in large buildings and are studying the effects of air pollutants, such as ozone, on lungs and determining how these materials cause emphysema.

Another good example is leukemia. Leukemia is a commonly occurring and highly fatal disease of people; but fortunately it also occurs in a number of animal species. Just about everything we know about the cause of leukemia has come from studies on mice, cattle, dogs, and cats. Very recently some real progress was made in understanding leukemia as a result of studies in the cat. The first cat studied was brought to the veterinary medical teaching hospital by a practicing veterinarian that had recognized that the cat had leukemia. Researchers collected plasma from the cat, spun it at very high speeds; and, lo and behold, under the electron microscope, there were millions of viral particles. For the first time they were able to concentrate large quantities of leukemia virus and now are making major strides in certain aspects of studies on leukemia. This progress stemmed directly from the efforts of a pet animal practitioner who indirectly was able to make a significant contribution to medical science because he knew how to recognize leukemia and recognized the importance of his patient to send it to the university for further study.

Now, there are many, many other similar examples, but it is not really necessary in view of the shortage of time, to go into them. I passed out some pictures. You see Burkitt lymphoma and bovine lymphosarcoma are very similar diseases in man and animals. I also have a picture of some sheep with a genetic defect and a lady that is not ill but who carries the defective gene for this disease. The disease, Dubin-Johnson syndrome, an important disease of children is identi-