1942

Interprofessional Relations

William H. Feldman
Mayo Foundation, Rochester, Minnesota

Follow this and additional works at: http://lib.dr.iastate.edu/iowastate_veterinarian

Part of the Comparative and Laboratory Animal Medicine Commons

Recommended Citation
Available at: http://lib.dr.iastate.edu/iowastate_veterinarian/vol4/iss3/2

This Article is brought to you for free and open access by the Student Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State University Veterinarian by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Interprofessional Relations

The interrelation of the veterinary and the medical professions*

William H. Feldman, D.V.M., M.S.†

MEDICINE may be defined as the science and art pertaining to the prevention, cure or alleviation of disease. These principles or objectives apply regardless of whether we are concerned with human medicine or veterinary medicine. Not only is it possible to merge these two professions in a common definition, but actually in a very practical sense these two medical sciences are so interrelated that to obtain a knowledge of one it is necessary either consciously or unconsciously to utilize important information that has accumulated in relation to the other.

The modern concept of the medical sciences is no longer that of distinctly separate and frequently narrow fields of endeavor in which each science, whether it be medicine, pharmacy, dentistry or veterinary medicine, stands alone. Instead, with each passing year it is becoming more apparent that all the medical sciences are definitely related and that each is an important and vital part of the whole. The interrelation of human and veterinary medicine is especially evident and important.

The dependence on animals, especially dogs, for facts pertaining to human physiology, probably exceeds that of any other subject in the medical curriculum. We should also remember that research workers trained as physicians are frequently concerned very importantly with veterinary medicine. This is especially true in laboratories of experimental medicine.

The successful conduct of laboratories of physiology or of experimental surgery requires all the knowledge, skill and ingenuity demanded of a veterinarian especially trained in small animal practice. Few such laboratories include veterinarians among their professional personnel. Undoubtedly this is a field of endeavor in which many veterinarians should be and eventually will be utilized.

The close relation of veterinary and human medicine becomes evident for the

* Read before the students of the Veterinary Division of Iowa State College, Ames, Iowa, March 12, 1942.
† Division of Experimental Medicine, Mayo Foundation, Rochester, Minnesota.

Spring, 1942
student from his first year of specialization. For example, structurally the bodies of man and of other animals are quite dissimilar; yet a certain unity is established by the nomenclature used to designate the respective structures. A similar relation exists in the fields of embryology, histology and pathology. It is obvious that professions which are concerned with the same biologic processes, although in different species, and which are dependent on a common terminology for recording or describing these processes, should recognize problems of mutual interest and importance.

**Identical Problems**

Fundamentally, veterinarians and physicians are concerned with identical problems. These are, briefly, the diagnosis of disease, its treatment or alleviation, and its prevention and control.

In the pursuit of his professional activities, the veterinarian functions in four distinct though somewhat overlapping fields: (1) administering to sick and injured animals, (2) protecting our livestock industry against losses from infectious and parasitic diseases, (3) the investigation of problems of fundamental importance to the medical sciences, and (4) the protection of the public against diseases of animals that are communicable to man. The last function constitutes a definite responsibility and one in which complete co-operation with the physician is essential if the public health is to be properly served.

**Similar Ideals**

It may appear to many that the relation of the veterinarian to diseases of animals is largely economic and the same idea may prevail concerning the relation of the physician to human disease. More idealistically, however, I like to believe that both the veterinarian and the physician are motivated in their daily rounds of activity by a fundamental desire to alleviate suffering and that each possesses a genuine sense of curiosity that makes every patient an unexplored mechanism, the exploring of which may reveal new truths that will be useful in reducing suffering and preventing diseases in others.

The veterinarian has contributed immeasurably to the health of the American people by the conservation of livestock. This is especially important at the present time when a nation at war must be assured a wholesome and adequate supply of meat and milk. Furthermore, the task of protecting the public from the diseases of animals that may be transmitted to man constitutes one of the most important responsibilities of our profession. It is true that diseases of animals that may affect human beings are relatively few, but the list includes a few diseases that may be fatal and some that leave in their wake complications followed by semi-invalidism for prolonged periods.

**In Public Health**

A notable recognition of the potential usefulness of the veterinarian in the program for the achievement of better public health was the announcement in 1939 that Harvard University had provided for the admission of qualified graduates from approved veterinary schools to the Harvard School of Public Health. Such students are permitted to take the regular course on the same basis as graduates from approved medical schools. Students accepted become candidates for the degree of Master of Public Health. The splendid opportunities for additional training provided by such a course should appeal impressively to young graduates in veterinary medicine who desire to equip themselves properly for a career in research, teaching, or the field of public health.

The announcement by Harvard University should do much to eliminate certain artificial barriers that exist between veterinary and human medicine. Both professions should benefit: the veterinary profession by the recognition that individual members of the profession are adequately grounded in the fundamental sciences and possess those intangible qualities characterized by scholarship, integrity and a high sense of citizenship; human

(Continued on page 152)
suture of number four catgut. The muscle and skin were closed with interrupted silk sutures. Finally a continuous apposition suture of catgut was placed through the skin.

The dog was placed on a mattress close to a radiator, and 850 cc. of dextrose solution was given intravenously by the drip method. However, the dog died some few hour later.

**Necropsy**

Upon autopsy, the right kidney was found to be involved by chronic pyonephritis and pylonephritis, and a large urolith filled the right renal pelvis. Numerous sand-like uroliths were also found in the right pelvis, ureter, and in the bladder. The left kidney was found to be hypertrophic and a focal purulent nephritis was present. The condition of the tissues showed a general anemia. The blood coagulated very poorly. Because of this, a considerable hemoperitoneum was present from the many minute vessels of the mesometrium. The uterine sutures were intact, and the parietal peritoneal incision had closed. There was no evidence of peritonitis.

The post-mortem revealed the cause of the extreme toxicity of the dog. Because of the involvement of the kidneys, toxic products normally excreted by the kidneys accumulated in the blood. Renal involvement is often found to be a complication of chronic pyometra in the bitch. However, in this case further complications arose from the presence of the renal calculi.

—R. P. Fisler, '43

**Diplomas for Seniors**

Seniors again this year received diplomas from the A.V.M.A. Although the parent association had abandoned the practice, due to the war, senior students had them printed locally. The diplomas were then sent to the A.V.M.A. for proper signatures. Presentation was made before the student chapter May 27, 1942.
tioned. The notable achievement of American veterinarians in practically eradicating tuberculosis from our American cattle has incited the admiration of physicians who are still waging an uncompromising but frequently discouraging fight against tuberculosis of human beings. The results of the attack on bovine tuberculosis are without parallel in the annals of medicine. That a chronic, progressive, ubiquitous, contagious disease that had been known for centuries to occur in cattle could be and actually was brought under control and all but eradicated well justifies the title Dr. J. Arthur Myers chose for the book he wrote recently recording this achievement. The title is "Man's Greatest Victory Over Tuberculosis."

If and when bovine tuberculosis is finally eliminated from our American herds, the achievement will constitute the completion of the most important and stupendous undertaking ever conceived for the betterment of public health. All of us, and especially those of you who have not assumed as yet the responsibility that will be conferred on you when you have completed your undergraduate training, must be ever watchful that in the future the gains made are not lost. We must be ever mindful that tuberculosis is a contagious disease, that every case comes from another and that tuberculosis of animals and particularly of cattle can be transmitted to human beings. Tuberculosis is one disease that is truly preventable and we should not tolerate any compromise with measures that have proved successful in reducing the incidence of the disease in the United States to the present low figure of less than 0.5 percent.

T. B. Eradication

The suppression of bovine tuberculosis exemplifies, I believe, the admirable results that can be accomplished by close co-operation between the veterinary and medical professions. It is true that the administrative responsibilities and the mechanics of the millions of tuberculin tests that were necessary to achieve these results were entrusted to veterinarians; yet the number of foresighted physicians who assisted in organizing and continuing the attack is legion. As a result of the insistence of the public health physician, most municipalities now require that the milk sold for human consumption be from tuberculin-tested herds, and as a further safeguard that most milk also must be pasteurized. As a consequence of this unity of function between the physician and the veterinarian, the United States undoubtedly has the safest milk supply of any nation in the world.

Control of Rabies

In the control and eventual eradication of no other disease is the cooperation of physicians and veterinarians as important as in rabies. That an enlightened citizenry should practically eliminate typhoid fever, make notable progress in bringing tuberculosis under control, control smallpox and diphtheria effectively, yet tolerate this menacing threat to human life with apparent complacency, is indeed cause for concern. In comparison with many other serious diseases, the total number of animals or human beings affected by rabies is small. However, the entire story cannot be visualized from statistics alone. The fear, anxiety, suffering, expense, and inconvenience attributable to the presence of this disease are factors inexpressible in precise terms. Death from rabies is a needless and horrible tragedy.

What the real reasons may be for our failure nationally to control rabies effectively may be the subject of considerable speculation. Perhaps there has not been sufficient cooperation between the veterinary and the medical profession, or perhaps the failure may be due to the fact that no central national agency has been charged with the responsibility of eradicating the disease. Whatever the factor or factors may be that have contributed to the present intolerable situation, it should be emphasized and repeated again and again that rabies is fundamentally the responsibility of the veterinary profession. It is my opinion that when this fact is universally recognized and when the task of eradicating the disease is made the responsibility of a centralized national
agency, such as the Bureau of Animal Industry of the United States Department of Agriculture, rabies will become as rare as glanders or as dourine. The disease constitutes an entirely needless hazard to human health and its presence should not and need not be tolerated by a nation in possession of sufficient information to eliminate the disease completely within a period of, say, three to six months. Less sentimentality and more realism in dealing with this problem would make the situation more encouraging.

Research

Nature provides exciting variations in patterns of disease and for the investigator with imagination the search for new facts need never be boring or without compensation. No sooner is one disease fairly well understood and perhaps, like tuberculosis of cattle, brought under control than a new entity appears or an old disease that is quiescent suddenly assumes alarming and disastrous aspects that provide the necessary impetus for the re-examination of old facts and for the search for new ones. Although the occurrence of such a disease may be potentially calamitous in its effects, when the storm subsides it usually can be said that our sphere of knowledge concerning the disease has been extended to new frontiers.

A recent example of a disease that appeared suddenly and assumed alarming proportions is infectious equine encephalomyelitis. This is by no means a new disease, probably being similar to that observed in Texas as long ago as 1882 and in Colorado, western Kansas and Nebraska in 1912.

The facts established at present indicate that the veterinary profession was and still is confronted by a major problem in animal health that cannot be ignored if American agriculture is to be protected against serious loss of its horse population. The emphasis placed on the importance of America’s production of an adequate amount of food for a world at war makes it evident that our horse population must be protected. A recurrence at this time of equine encephalomyelitis in epizootic proportions might well prove catastrophic. Important though the disease is as a threat to the horses of the nation, the disease assumes even greater significance since it has been established that both the Eastern and the Western types of the virus are capable of inducing a fatal form of encephalitis among human beings. Credit for suggesting this possibility must go to one of our foremost veterinary pathologists, Karl F. Meyer of California. Although the total number of reported cases of encephalitis in human beings due to the virus of equine encephalomyelitis (the Eastern as well as the Western type may affect man) is not great, it is likely that the disease has not been recognized in many cases. The serious character of the disease among human beings provides an additional reason why this disease must be eradicated rather than controlled.

Prevention and Control

The prevention and control of this disease in horses and in human beings have provided an exceptional opportunity for the co-operative action of the veterinary and the medical professions. Although the cause of the disease is known, little information exists as to how it is transmitted and as to what the natural reservoirs of the virus may be. It seems unlikely that the virus is transmitted from horse to horse, or from horse to man by direct contact. It also seems unlikely that the horse is the natural source of the infection. Many species of birds, mammals and insects are suspected.

Although it is reasonable to believe that by vaccination equine encephalomyelitis may be kept at a minimum so far as horses are concerned, there is no reason for believing that suppression of the disease in horses will eliminate the hazards to human beings until the natural reservoirs of the virus are discovered and means taken to eliminate the virus at its source. Solution of the problem is most likely to be hastened if the attack can be continued by the medical and the veterinary professions working in unity rather than by either working from a detached and independent point of view.
Our vigilant state and federal veterinary services have succeeded in practically eliminating the danger to human beings of many diseases of animals that at one time constituted an ever present menace to human health. Glanders of horses and mules is an example of a disease the incidence of which has been so reduced by state and federal veterinary agencies that it has become a rarity. Undulant fever is prevented from becoming a major health problem by the splendid veterinary supervision of our milk and meat supply. Also, through the co-operative efforts of veterinarians and physicians, sufficient knowledge has been accumulated to enable human beings to escape the consequences of infections such as tularemia, trichinosis, and psittacosis or parrot fever. When one realizes that in the United States sixty persons die every hour from a preventable disease, it is a source of satisfaction to know that the veterinary profession has succeeded in removing many hazards to human health that might otherwise provide sources of serious disease.

Although the impression may prevail that the contributions of the veterinary profession to the betterment of public health have been largely from veterinarians engaged in research, this is by no means true. Tribute should be paid to the large number of conscientious and competent practicing veterinarians who are confronted in their daily routine with problems related to public health. Diseases of animals and conditions of sanitation that are of importance to the public welfare unexpectedly present themselves, and while the public health officer is concerned eventually, the immediate responsibility is the veterinarian's.

The alertness of the practitioner for danger signals constitutes an important phase of the protection of human health from infectious diseases provided by the veterinary profession. Anthrax, glanders, foot-and-mouth disease, rabies, Weil's disease, and mastitis are some of the diseases of concern to public health that are most likely to be recognized first by the practitioner of veterinary medicine.

STANDING FOURSQUARE

with the
GRADUATE VETERINARIAN
and alert to his
requirements for
PHARMACEUTICALS
BIOLOGICAL and
SURGICAL
SUPPLIES

The Haver-Glover Laboratories
KANSAS CITY, MISSOURI

Spring, 1942
His ability to recognize these conditions promptly and to take the necessary measures for their suppression enables him to discharge his responsibilities in the manner expected by an enlightened citize

As veterinarians we must take cognizance of the fact that gains made in suppressing infectious and parasitic diseases can be maintained and strengthened only by constant vigilance. The veterinarian and the physician must be mindful that the agents of disease recognize none of the rules of decent conduct but are always ready to attack when the circumstances are propitious. The task of controlling infectious diseases when once begun must be continued indefinitely. Old diseases may seem to disappear, yet they are only quiescent. New diseases are being recognized constantly. If our watchfulness and diligence are lessened through a false sense of security or indifference, infectious diseases are likely to get out of control, often with disastrous results.

Still No Utopia

Although the attack on the complex problems of disease is becoming more militant and intensified with each passing year, the final goal, that Utopia where disease has been banished, is probably not possible for man to achieve. Many infectious or parasitic diseases, however, can be controlled by reducing the possibilities for their transmission and by utilizing the agents and knowledge that research has provided for their prevention and treatment. To continue the attack and to maintain the objectives gained are important parts of every veterinarian’s responsibility. In the conquest of disease the veterinarian has established a record of splendid achievement. In the field of medicine in which he is qualified he has contributed substantially.

The increasing awareness of the general public to matters concerning health emphasizes the opportunities and responsibilities for adequately trained veterinarians who can properly assume their share of the task of making the United States a nation in which bovine tuberculosis will have disappeared, undulant fever will have ceased to exist and rabies will no longer cast the tragic shadow of death over the lives of children. America is health-conscious as never before and the opportunities for veterinarians to contribute to the health of the nation are unlimited.

MEDICAL HORIZONS

The extensive experiments agree with the concept of sudden mutation causing a sudden change in virulence of a particular bacterium. When once this mutation has occurred the strain derived from this mutated bacterium holds the new level of virulence established by the mutation. The lethal capacities attained by different mutations are different. We now have several of these strains in the laboratory. Some are far more virulent than we have had in the past. Other mutations are nearly avirulent forms of Salmonella typhimurium. Yet in each instance the mutants retain the characteristics of the species in sugar fermentation, growth characters and serum reactions. Similar experiments with the fowl typhoid organism, Shigella gallinarum, show the same results.

In corn wilt we have been able to extend the study of bacterial variation in virulence through the use of radiant energy. Mutants thus caused often markedly differ in their virulence from that of their parent strain. In some the virulence increases; in others it decreases.

These results show the interlocking of genetic constitutions of the host and the pathogen in the production of the abnormal state which we call a disease. There is no reason to suppose that these experiments are peculiar to the mouse typhoid, fowl typhoid or the bacterial wilt of corn. Are the experiments herein so hastily portrayed giving us a prevue of a new horizon in the march toward disease control?