POSITION PAPER: AVIAN MEDICAL EDUCATION

It is the concern of members of the American Association of Avian Pathologists that the veterinary schools in North America may be failing to take full advantage of one of the greatest opportunities for major contributions in research, teaching and service in animal agriculture to come our way in this century. Some members of our profession feel that we have "already lost" avian medicine. This is true only to the extent that we will it to be so. Veterinarians can and should regain our rightful position of responsibility for the health care of members of the avian species. This achievement is not only possible, it is realistically achievable during the next decade. Two important prerequisites for success are:

1. The veterinary profession must desire to succeed in this important realm of animal agriculture which is much in need of our services.

2. We must be willing to accept the premise that avian animals may have to be served by veterinary medicine in a manner different from mammalian animals.

Veterinary medicine should certainly welcome any new or enlarged area of challenge and opportunity for service by members of our profession. The second premise likewise should present no real difficulty, since other

areas of veterinary responsibility such as public health, laboratory animal medicine and meat inspection have been served for many years by salaried veterinarians in a manner quite different from the traditional private practice of veterinary medicine so well-established in the service of mammalian companion and food animals.

Throughout most of the hundreds of years since man began his association with domestic birds, chickens, turkeys, ducks, geese and other birds have been kept as barnyard scavengers or small farm flocks. In this relationship they were hardly worthy of the attention of veterinarians. As the modern poultry industry began its rapid expansion after World War II there were many enthusiastic husbandry people involved, but few veterinarians with sufficient interest to assume responsibility for the health care of the ever-increasing size and numbers of commercial flocks.

Importance of the Modern Poultry Industry

The poultry industry has now grown into a multi-billion dollar enterprise, accounting for almost one-third of the world's meat supply. There are several important reasons for the phenomonal success of this unique industry. Chickens are among the most efficient converters of feed grains into animal protein. Modern broilers convert 1.9 pounds of grain into one pound of live weight. This is almost twice the efficiency ratio for swine and four times the efficiency of beef cattle. Broilers yield 72% edible meat, compared to 53% for hogs and 42% for cattle.

Poultry as well as other animals should supply an ever-increasing amount of meat to feed a world population already critically short of animal protein and expected to increase by one billion people over the next 40 years. The necessary increases in animal protein cannot be achieved solely by means which have made significant contributions in the last quarter century, i.e., improved breeding, better management and advances in nutrition .

Impact of Disease and Parasitism on Commercial Poultry Production

One of the factors having the greatest impact on poultry production is disease. The United States Department of Agriculture estimates that poultry diseases and parasites cost the American poultry industry in excess of 300 million dollars annually. No estimate is available for losses on a world-wide basis, but losses ranging between 10 and 20 percent of the total cost of production are considered realistic. These losses include not only such direct losses as mortality and loss of weight gains and egg production, but costs of treatment, vaccination, and preventive medication as well.

Some striking examples of the cost of poultry disease are the expenditure of 55 million dollars to eradicate exotic Newcastle disease which was accidentally introduced into California in 1971, and the 100 million dollars expended annually in the United States for preventive medication to control protozoan diseases. Losses from poultry diseases go almost

unabated in many countries of the world where poultry production is gaining greater importance each year. As with any other factors influencing the cost of production, the consumer must ultimately pay the additional price resulting from disease.

Contributions from Veterinary Medicine

Although the veterinary profession has been slow to realize the opportunities and even slower to appreciate its responsibilities to the avian sector of animal agriculture, there are certain notable exceptions. Veterinarians have made important contributions toward the control of such diseases as salmonellosis, respiratory diseases, coccidiosis and Marek's disease. High quality vaccines have been developed for protection of flocks against many diseases which once caused devastating losses. However, much work remains to be done. Diseases such as fowl cholera, omphalitis, colibacillosis, infectious bursal disease, lymphoid leukosis, adenovirus infections and mycoplasmosis continue to cause problems. If past history can be used to predict the future, "new diseases" will continue to emerge as techniques for control or eradication of older diseases are developed and implemented.

Current State of Avian Medical Education in Veterinary Schools

A strange paradox in veterinary medical and agriculture education is the apparent decrease in emphasis on the avian species as well as other food

animal species at a time when both domestic poultry and pet birds are increasing in importance and numbers. A survey of nineteen North American veterinary schools conducted by the AAAP in 1975 showed that the average total number of hours spent in avian medical education was 48 during the entire four year professional program. Avian medicine courses are offered only as electives in some schools. Only two schools have departments of avian medicine. The responsibility for teaching poultry diseases is variously assigned to departments of epidemiology, microbiology, pathology, and in some colleges is left to the diagnostic laboratory. A unified approach to the study of avian diseases is simply not available in most veterinary schools. As a consequence, our new graduates do not have competence nor even the opportunity to develop the competence to meet the needs of a highly sophisticated poultry industry. No one questions the need for departments of small animal medicine or large animal medicine, yet there seems to be great reluctance, even antagonism, toward the establishment of departments of avian medicine. Supprisingly, this is true even in states where the farm income from poultry approaches or surpasses the total income from all other food animals combined.

Discussion and Proposed Solutions to Problems in Avian Medical Education

Research directed toward control of economically important disease problems in flocks and herds is one of the most important contributions of veterinary medicine to food animal agriculture today. This becomes increasingly evident as veterinary medical practice moves from individual

animal treatment toward disease prevention on a flock or herd basis, and as our clients become corporate producers of meat, milk and eggs rather than individual farmers. In addition to striving for excellence in research, veterinary colleges must also concentrate on effective teaching and service. Although they are of equal importance with research, the effectiveness of teaching and service are somewhat more difficult to evaluate. It is apparent, however, that good teaching and service usually exist in schools where research activity is strong.

Some recommendations for developing strong avian medicine programs are as follows:

1. Strong research and service activities directed toward meeting the needs of the poultry industry must be instituted. These are essential for teaching, because they attract and provide teaching material and experience for professional, resident and graduate students, and expose the new veterinary student to yet another vital aspect of his profession.

2. The establishment of departments of avian medicine should be considered where appropriate. Such administrative units in two existing veterinary schools have demonstrated their value by a decade of uninterrupted research productivity which spans several changes of deans, department heads and changing educational philosophy. Responsibility for relatively large admini-

strative units such as departments of avian medicine should be assumed by veterinary schools in states which benefit most directly from the poultry industry.

3. Recognition and status should be afforded to programs in avian medicine on a basis equal to large animal medicine and small animal medicine. Some of our most capable veterinary scientists are working in the field of avian diseases. Thirty-eight out of 174 papers presented on the professional program at the AVMA annual meeting in 1977 were in the section on avian medicine. This was the largest single section by a considerable margin.

4. Avian animals should be included as models and examples throughout the professional curriculum in courses such as anatomy, physiology, pharmacology, pathology, parasitology and infectious diseases. Avian species and their production and health maintenance provide ideal herd health or flock health models. Avian models can also serve as examples contributing to an understanding of health problems in food animals, captive wild animals, laboratory animals and even kennel management.

5. A separate course in avian medicine should be included in the professional curriculum, where deemed advisable. To be of value, this course must be taught by a veterinarian with an

adequate background of experience with poultry diseases, both in the laboratory and in the field.

6. Consideration should be given to including diseases of pet birds and wild birds under the course offerings of the department of avian medicine or equivalent group. Small animal clinicians often seem reluctant to incorporate information on pet birds into their already crowded course offerings. Birds as companion animals are an ever increasing aspect of our society due to environmental and housing restrictions. Thus, they have taken on new significance for the veterinarian in private practice. The practitioner is all too often in the position of telling his client that he is not well informed in the field of pet bird problems. Few seem to know much about (or be concerned about) diseases of wild birds, even though some of the diseases of wild birds are transmissible to domestic flocks as well as to man.

A strong avian program in a college of veterinary medicine as well as in schools of agriculture will effectively complement traditional programs and ensure needed educational exposure and experience with all species of animals.

The improved avian program will be of special benefit to the few students who may choose careers in avian medicine either with commercial poultry

or with pet birds. But all students must be given exposure to avian species and afforded the opportunity to make that choice concerning their possible future in avian medicine. Even those veterinary graduates who eventually choose careers as inspectors in poultry processing plants will benefit much more from their avian medicine courses than from courses in large animal medicine or small animal medicine. Graduates who do not work directly with avian species will benefit from having a well-rounded exposure to all species. No veterinarian should ever have to apologize for his lack of knowledge of the avian species because the opportunity to learn was not available in the veterinary school which he attended.

The American Association of Avian Pathologists, through its officers, directors, members, and the committee on continuing education, is available to assist all veterinary planning groups in the formulation of programs to improve research, teaching and service with avian species.