The 25th Annual

Waltham/OSU Symposium

Small Animal Ophthalmology

October 27—28, 2001

History Of Veterinary Ophthalmology With Particular Emphasis For Ohio

Milton Wyman DVM, MS, Diplomate ACVO

In researching the historical aspect of veterinary ophthalmology, I became impressed on the database that has accumulated in the discipline. It mimics medicine in general but it is amazing how little accurate data was obtained for literally thousands of years before the 20th century. Apsyetus, a veterinarian, was among the authors of papers found in Hippiatrica circa 1000 AD referring diseases of the eye in dogs and cattle. However, papyri of ancient Egypt had references to similar diseases in the same species. Vegitius in Arstis Veterinariae sive Mulomedicinae, wrote about ìmoonblindnessî in the horse circa 450 - 510 AD. During this period factual information was limited.

Historically the Italians contributed to the earliest history. For example in 1250, Giordano Ruffo wrote a chapter on equine eye diseases in his text Ippiatrics. In 1266 Theodorico Borgognoni included eye diseases in horses in the text Ippiatraia Mulomedicinae. Francisco Toggia wrote an extensive description of the most common causes of blindness in horses and means of prevention in 1819.

The Farrier Magazine published in 1818 contained 46 pages related to The Pathology of the Horse's Eye written by Dr. J. Carver, a veterinary surgeon and member of the Royal Veterinary Medical Society of London. This material was directed toward medical students and others interested in studying the diseases and obtaining a knowledge of the function, use and appendages of the horse's eye. Carver was a proponent of hygiene in the prevention of ocular diseases. He felt that most maladies of the horse's eye were primarily due to the filthy and poorly ventilated stables the horses were housed in. He reported that 3 out of 5 horses on Long Island, New York were blind with cataract because all horses had to stand on hot beds of manure with no ventilation to their stalls. A common treatment of the time for eye maladies was to blow powdered glass in the eye. Carver was adamant in his critique of this practice.

One of the earliest and most accurate descriptions of the anatomy of the horse's eye was published in 1687 entitled, The Anatomy of the Horse by Andrew Snape, Farrier to His Majesty. Leonardo Da Vinci made both anatomical and philosophical observation in his interest in comparative ophthalmology. He conducted many dissections of both human and animal cadavers from which he concluded that the vision of nocturnal animals was related to the ratio of size of the eye to the brain since the larger eye allowed a larger pupil to see better at night. An example of a good observation with a poor conclusion.

A 19th century discovery had a tremendous influence on the examination of the fundus of the eye as well as contributing to the development of the ophthalmoscope. Johannes Purkinje, a Czech physiologist, described his experiment of 1823. In Purkinje's words, when I observed the eye of the little dog from a certain direction, that light seemed to be thrown back, until I discovered that the light is reflected from the hollow surface of the lens into the eye and then returned. When the experiment was immediately surface of the lens into the eye and then returned. When the experiment was immediately repeated with human beings, the same phenomenon occurred: indeed, the whole pupil lit up in a beautiful orange color. This basic reflex that we accept without thinking about it led Helmholtz, who at least got credit for the invention of the ophthalmoscope in 1850. Actually Charles Babbage invented an ophthalmoscope 7 years before that of Helmholtz. Wharton Jones.....committed the monumental folly of condemning the instrument, so that Babbage threw it aside as a toy of which he thought no more. Helmholtz invented his instrument as a tool for instructing his students. The first year following its manufacture only 18 instruments were sold. The ophthalmoscope however, revolutionized the ability to diagnose ocular disease in humans and animals and began the descriptive documentation of many retinal diseases.

Contributions to the science can be traced to the European continent for the first part of this history. Frances contributions included Urbain Leblanc who wrote his treatise on maladies of the eye seen in domestic animals in 1824. This book was translated into German.

Eugene Nicolas was a military veterinarian whose major contribution was a text published in 1914 entitled Veterinary and Comparative Ophthalmology, which was the text of the day. It was translated into English and was used as the text.

Germany was the first country that gave the discipline a boost both in human and veterinary medicine. Among the contemporary leaders of the time was Rudolf Berlin who began his teaching career in ophthalmology at the Veterinary College of Stuttgart in 1875 while practicing human ophthalmology. He contributed by advancing the science through specific ophthalmology journals.

Berlin's successor at Stuttgart was Gustav von Shcheich. His contributions included a publication on diseases of the eye in horses.

Stuttgart's next ophthalmologist was Oscar Konigshofer. He remained there until his death in 1911. In 1912 the Stuttgart veterinary college was closed due to financial difficulties and ended a promising era of veterinary ophthalmology.

Oscar Eversbusch, a Munich physician, was the contemporary figure in veterinary ophthalmology. He taught both human and veterinary medicine and helped Professor Berlin in editing the journals of the time.

Dr. Heinrich Moller was the first veterinarian to contribute to veterinary ophthalmology. He taught for over twenty years at the Berlin Veterinary College and contributed in the literature regarding veterinary surgery and ophthalmology.

Austria's claim to fame was limited to Dr. Josef Bayer who was professor of Surgery at the Vienna Veterinary College. He was a physician and then later graduated as a veterinarian in 1874. His primary interest was recurrent uveitis in the horse. He collected hundreds of eyes postmortem, and began the ophthalmologic museum which became world famous under the direction of Otto Uberreiter. Professor Bayer influenced the establishment of veterinary ophthalmology as a discipline in many European veterinary schools. The Veterinary School at Vienna established the Josef Bayer Gold Medallion, which honors veterinary ophthalmologists for unusual proficiency and contributions in the area of practice. Drs. S.R. Roberts and W.G. Magrane of the United States were recipients of this award in 1968.

Professor of Surgery at the veterinary school at Utrecht, W. C. Schimmel, first incorporated ophthalmology in their program in 1882. Following Schimmel's death, Dr. Heinrich Jakob assumed the teaching of both small and large animal ophthalmology. In 1919 ophthalmology was made a specialty at Utrecht.

Dr. George Coats, a human surgeon at Moorfields Eye Hospital in London wrote dozens of papers on congenital anomalies of animal's eyes. Dr. Coats had a colleague, Dr. Edward Nettleship who was a veterinarian who later became an ophthalmologist with a distinguished British career. He collected a large number of animal eyes for Coats and was co-author of a monograph on albinism in Man, which contained a great deal of information on ocular diseases in dogs and humans.

Dr. Henry Gray established one of the first practices that specialized in small animals. He first wrote about PRA in Irish Setters. His major contribution to veterinary ophthalmology was his translation of Nicolas's book Comparative Veterinary Ophthalmology which was the only source of ophthalmic information for veterinarians in English speaking countries during the first part of the 20th century.

George E. de. Schweinitz, MD had a intense interest in comparative ophthalmology. He was a famous ophthalmologist at the University of Pennsylvania.

The colleges of veterinary medicine in the United States had no interest in ophthalmology and therefore there were no contributors to the early history of veterinary ophthalmology. The only text was the book translated by Gray of Nicolas's book

Dr. Hilding Magnusson was a veterinary pathologist, head of the Veterinary Bacteriologic Laboratory at Malmo, Sweden, with a distinguished worldwide reputation. Early in his career he described his observations of hereditary retinal atrophy in the Gordon setter. This work was the basis for those who followed in this study.

During this entire period of time the accumulation of a database for veterinary ophthalmology at best was pathetic. As general veterinary medicine grew, so did the specialties. Ophthalmology was obligatory in the curriculum of all veterinary schools in Europe as early as 1875. In this country the formation of the American Society of Veterinary Ophthalmology and subsequently the American College of Veterinary Ophthalmologists, was the nidus in the development of the discipline in the United States. There were a few schools in the United States i.e., University of Pennsylvania and Ohio State University had a limited degree of specialization, but prior to board certification system full time involvement in a special clinical area was not practiced. As more people became certified or qualified in specialties,

the Council on Education of the American Veterinary Medical Association encourage the establishment of full time faculty positions of these specialties.

With this emphasis on specialization, the United States quickly caught up and, in my opinion, surpassed the European Schools. Dr. Otto Uberreitier's ophthalmology clinic at the Veterinary School, University of Vienna, was the unique and courageous example of an all-inclusive specialized unit, which served as a model for those people developing their specialty.

Dr. W. G. Magrane was the first private veterinarian in the world to develop a private practice devoted entirely to eye diseases and surgery. Dr. Magrane left a general practice he and his brother began in 1940 to begin this unique practice in 1964.

The American Society of Veterinary Ophthalmology (ASVO) was first instigated by Dr. Magrane in 1957 and came to fruition in August of 1958. This organization was based on the interest of individuals in ophthalmology without specific criteria requisite for membership. The AVMA formed an advisory board on veterinary specialties. The Essentials for Specialty Boards was prepared in 1950 and approved by the House of Delegates of the AVMA in 1951. The essentials were:

1. Represent a distinct and recognized specialty of veterinary medicine.
2. Establish critical standards for admission to membership and abide by them.
3. Be incorporated.
4. Determine whether or not candidates have received adequate preparation as defined by the Board.
5. Provide a comprehensive test of the candidate's fitness and ability.
6. Certify as to the competence of those veterinarians who have satisfied the requirements of the Board or College

The American College of Veterinary Ophthalmologists became the third clinical discipline to receive specialty status. Application for recognition by the Advisory Board on Veterinary Specialties was made in June 1969 with probationary acceptance granted March 21, 1970. The Charter members were:

Gustavo D. Aguirre	Leonard Krawitz	Lloyd C. Helper	Milton Wyman
Roy W. Bellhorn	Andre M. Lavignette	Glenn A. Severin	Seth A. Koch
Stephen I. Bistner	William G. Magrane	Harlan E. Jensen	Earl Catcott
James D. Carter	Charles L. Martin	Samuel J. Vainisi	Waldo F. Keller
Robert M. Cello	Charles J. Parshall, Jr.	Kirk N. Gelatt	Lionel F. Rubin
Richard H. Donovan	Seymour R. Roberts	Ralph C. Vierheller	Craig A. Fischer

Full approval was awarded in 1974. Since that time the College has grown in number and knowledge. During my professional lifetime, I have seen amazing changes in our knowledge base, surgical skills, academic and research programs. Changes that are logarithmic and I would like to share some of this with you.

The beginning of ophthalmology at The Ohio State University began in the early 1950ís. The stimulus for this interest was in the person of J. Earl Catcott. He was a small animal clinician with an interest in the eye. He introduced indirect ophthalmoscopy to the college and with his association with the department of ophthalmology at the medical college, he became interested in fundus photography. He was given an old Zietz camera with dire need of repair, which he accomplished on a shoestring and with much work, blood sweat and tears, he took the first fundus photographs of the dog. I was fortunate in inheriting them and share it with you at this time. Dr. Catcott stimulated E. F. Donovan to develop the ability of indirect ophthalmoscopy and he began to incorporate this technique in the small animal section. This was the first activity of a specialization in the clinical arena.

In the 50ís the entire student exposure in ophthalmology was two hours of lecture. When the student rotated through small animal medicine, they were exposed to some eye diseases if they came into the clinic and were recognized as such. In 1960, Dr. Donovan asked me if I would like to help Dr. William Havener in a research project that he was conducting relative to light and laser coagulation for retinal detachment. His laboratory animal was the rabbit. I agreed to help and spent many hours holding rabbits heads after I had anesthetized them. Dr. Havener took me under his wing and invited

me to attend some lectures in ophthalmology and I did. This excited me and I began to use the instruments at the medical college. In 1962 he invited me to attend the resident program and in 1963 became my mentor for my MS.

Because of this exposure, Dr. Donovan and I developed the first elective course in the veterinary ophthalmology that was ever given in a college of veterinary medicine. This was offered 7:00 AM three days a week and eventually became ophtho operative practice. In 1964 we included a specific course in ophthalmology in the curriculum.

The first organized residency in a specialty was offered by our department and Dr. Charles Martin was the first resident.

Changes in our discipline was so dramatic, I will demonstrate some of them during my oral presentation. I am so proud of the present section of veterinary ophthalmology that words are difficult to do it justice. Suffice it to say that if they improve as much as it did in my day, we are going to transplant brains and eyes in the future!

Additional copies can be obtained from Waltham USA, Inc. The proceedings may also be found online at the WALTHAM® web site at http://www.walthamusa.com or the VIN web site at http://www.vin.com/OSUWaltham/2001/.

Designed and published by Veterinary Information Network (VIN).