

VETERINARY OPHTHALMOLOGY

Past, Present & Future

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Past: The Beginning

- Distinguished pioneers (to about 1900)
- Our foundations (to about 1960)
- The history of ophthalmology spans about 150 years!

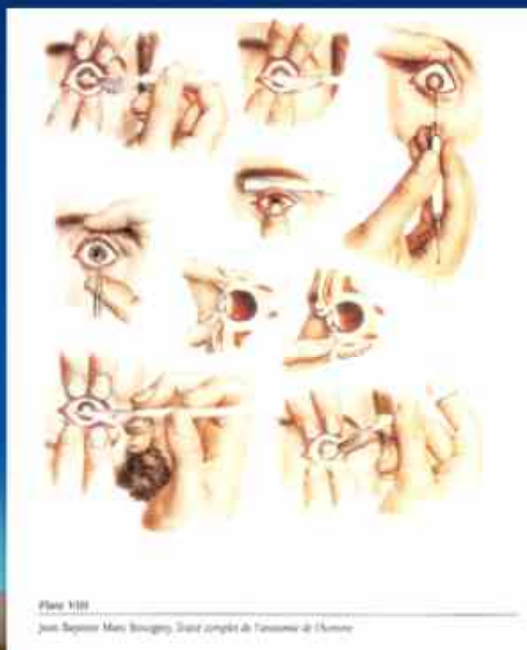
Pioneers in Ophthalmology

- Changes in technology, social discourse and economics greatly affected the development of ophthalmology.
- Development of the microscope and ophthalmoscope advanced the field.

A Continuing Association

- The genesis of human (medical) ophthalmology and veterinary ophthalmology often involved the same scientists. Comparative ophthalmology started and continues to this day!
- Cataract surgery was very important in development to this specialty.

Early Cataract Surgery in Man



Fundus/Tapetal Reflection

- Tapetal reflection in dog and cat stimulated investigations (Jean Méry, 1704; J.E. Purkinje, 1823).
- Hermann von Helmholtz (1850) credited with discovery of ophthalmoscope. Charles Babbage (cited by Jones in 1854) may have been the first inventor.

Hermann von Helmholtz (1821-1894)



From France

- Urbain Lebane (1797-1871) Alfort Veterinary School
- Eugéne Nicolas authored 3 books on veterinary & comparative ophthalmology (1898;1908; 1928). Became Director of Alfort Veterinary School (1924-1934).

Eugéne Nicolas



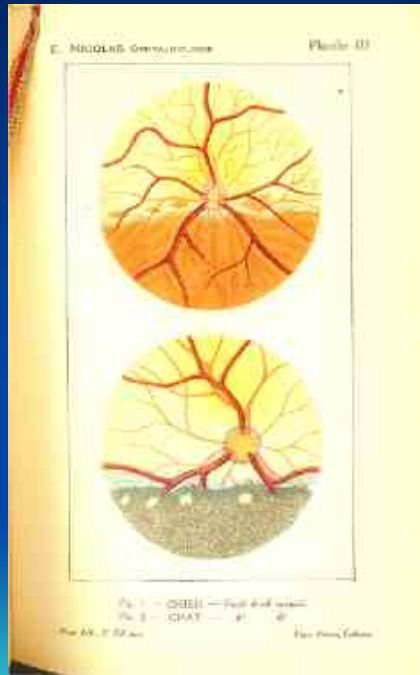
Three books by Nicolas:

- Nicolas E and Fromaget C. *D'Ophthalmoscopie Vétérinaire*, Baillière, Paris, 1898.
- Nicolas ED. *D'Ophthalmoscopie Vétérinaire- et Comparée*, Asselin et Houzeau, Paris, 1908.
- Nicolas ED. *D'Ophthalmoscopie Vétérinaire- et Comparée*, Vigot Frères, Paris, 1928.

Texts by Nicolas



Nicolas 3rd edition: pp 107



Germany and Austria

- Instruction offered at veterinary schools in Berlin, Stuttgart, Munich and Vienna.
- Rudolf Berlin (1833-1897) a medical ophthalmologist taught at Stuttgart Veterinary School (1875).
- Started with Oscar Eversbush (Munich) the journal- *Zeitschrift für vergleichende Augenheilkunde* (1882 to 1893)

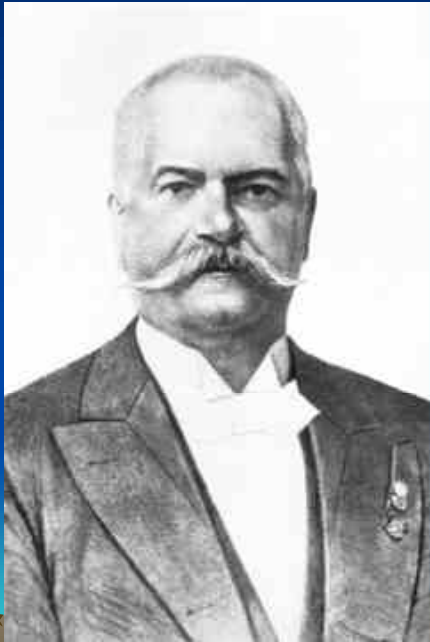
Zeitschrift für vergleichende Augenheilkunde (1882-1893?)



Austria

- Josef Bayer (1847-1925) was first a physician and later a veterinarian.
- Developed a large collection of postmortem eyes (especially equine recurrent uveitis).
- Co-editor on the journal (with Berlin and Eversbusch)

Josef Bayer (1847-1925)

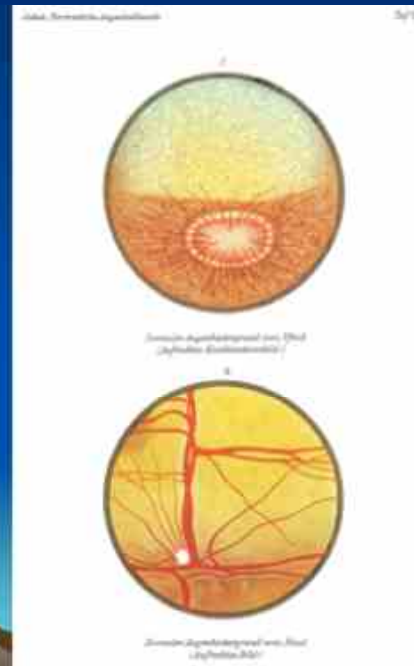


Heinrich Jakob (1874-1941)



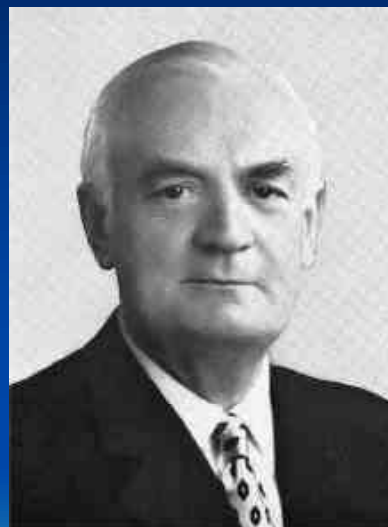
- Best known for two books:
- *Tierärztliche Augenheilkunde.*
- *Pathologische Anatomie des Auges der Tiere.*

Tierärztliche Augenheilkunde



More Recent Contributors

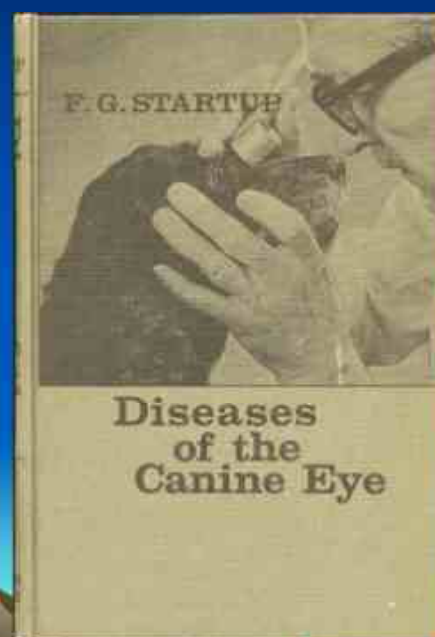
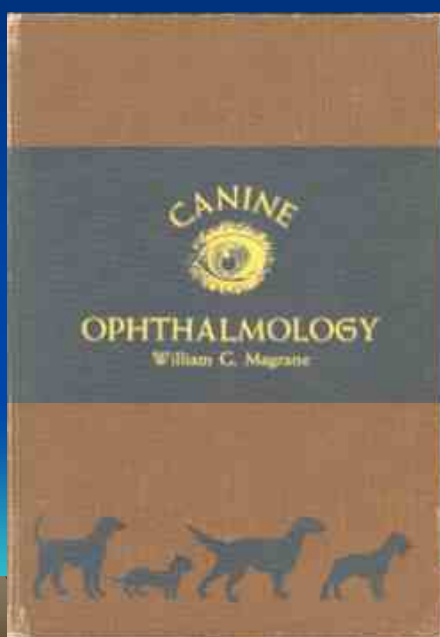
- Symthe- *Veterinary Ophthalmology* (1956) and *What Animals See* (1961).
- Otto _berreiter- papers on lens luxation, lens removal, and chapter in- *Advances in Veterinary Science* (Academic Press, 1959).
- Many papers by Herbert B. Parry, Clifford Formston, and Gordon C. Knight from England (1950s and on).



Current and Active Contributors

- These ophthalmologists include those who are still active in the discipline as well as those recently retired. This list is huge! Veterinary ophthalmology has been truly blessed with excellent people!

The First Canine Ophthalmology books



THE PRESENT

- This period spans the latter one-half of the 20th century and the establishment of the specialty world-wide.
- Includes:
 - Beginning of Veterinary Ophthalmology societies .
 - New college or board-certification
 - Beginning in academia and private practice as a very viable referral specialty.
 - Development of residencies and research programs

Cataract Surgery

- Cataract surgery continues to define medical and veterinary ophthalmology.
- Starting from intracapsular then to extracapsular lensectomies and now to phakoemulsification with IOL implantation now.
- Success rates from 50% (1950s), 80% (1970s) and now 90+% in the dog.

Veterinary Ophthalmology Societies

Developed in many countries to promote interest and information exchange.

- Examples include: ASVO (1957), AVOS (Australia, 1975), JSCO (Japan, 1980), ISVO (1980), SFOV (France, 1980), GEMO (France, 1981), CAVO (Canada, 1982), SIOV (Italy, 1984), ESVO (1984), Swedish Eye Panel (1976), BSAVA Ophthalmology Study Group (UK, 1976), BRAVO (UK), the German Eye Panel and others.

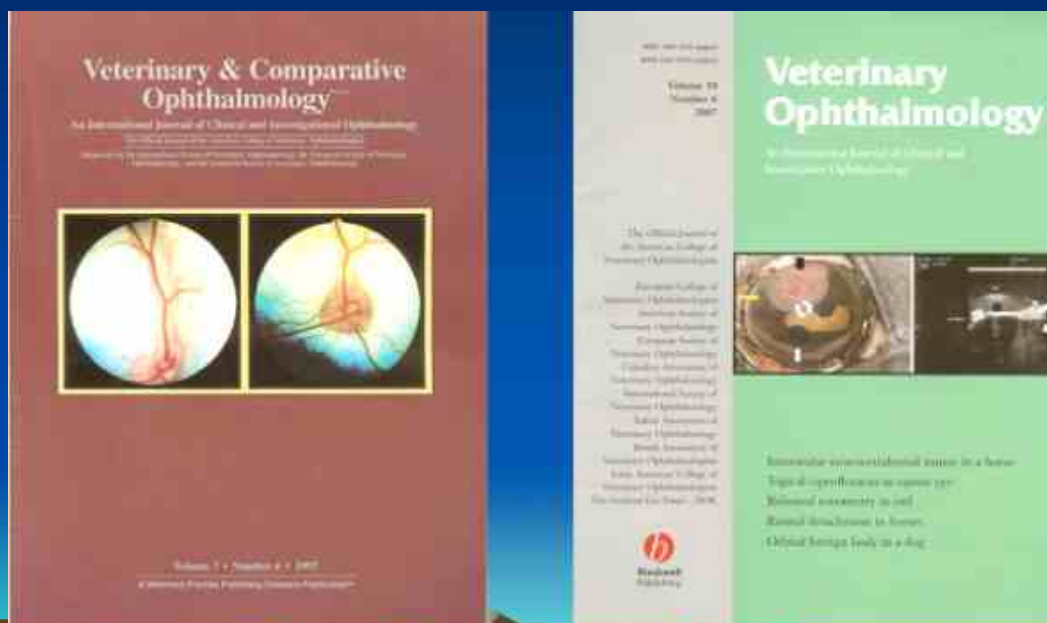
The Veterinary Ophthalmology Colleges or Boards

- Encourage education, research and practice; establish standards for training and recognize these individuals; develop graduate and residency programs; and advise veterinarians desiring certification.
- Colleges include: ACVO (1970); JCVFO (Japan); ECVO; and CLOVE (Latin America). Certificate/Diploma in UK.

Veterinary Ophthalmology Journals

- Promotes the specialty.
- Facilitate publication of related articles (which some general veterinary journals will not).
- Three journals: 1) *Zeitschrift für vergleichende Augenheilkunde* (1882-1893?) ; 2) *Progress in Veterinary and Comparative Ophthalmology* (1990-97); and 3) *Veterinary Ophthalmology* (1998+).

Our New Information Base:



Veterinary Ophthalmology Books

- Since the mid 1970s the number of veterinary ophthalmology texts has exploded!

- Vet Ophth texts-



OUR FUTURE

- Expanding our research foundation. Our base of active investigators and potential authors is growing too slow! About animal eye 500 articles published in 1990-2000; about 600 refereed articles from 1998-2007.
- Continue to strengthen our college-approved residencies. Make research studies a requirement.

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OUR FUTURE

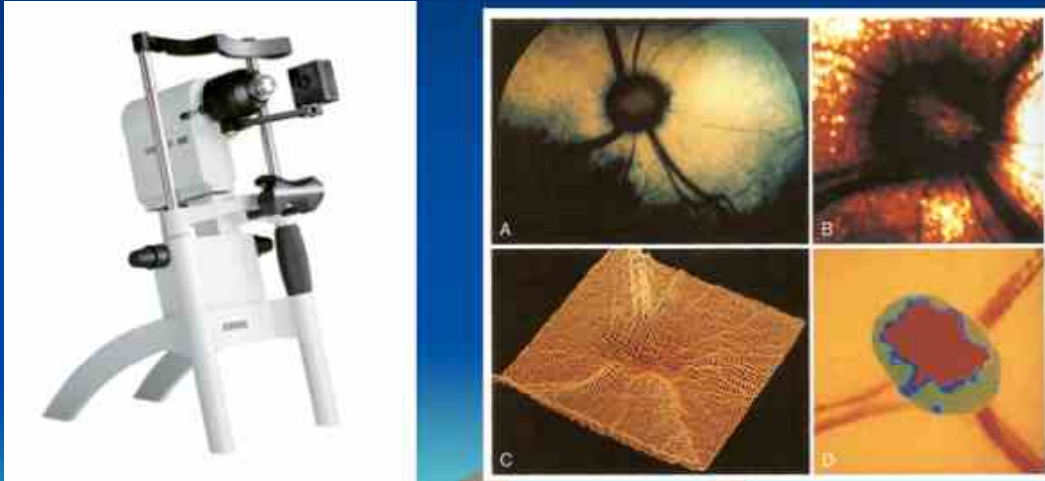
- Combine academia and private practice research: 1) patients numbers and 2) bench-research. Benefits vs limitations.
- Should we all pledge to give some our time or resources to advance our specialty? YES

OUR FUTURE

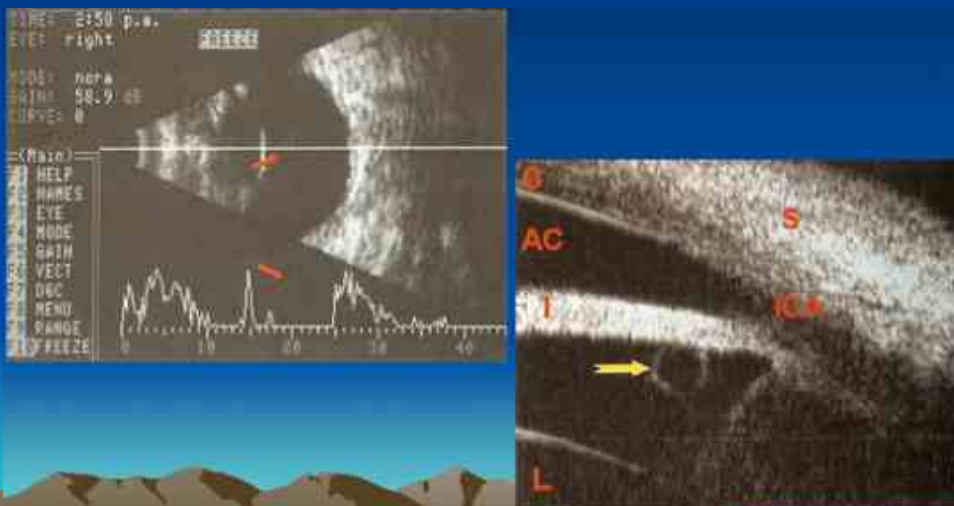
Incorporate the new imaging systems into clinical and research activities. Advances in non-invasive imaging techniques can markedly enhance our understanding of eye diseases and improve patient management. Systems become available as their costs decline.

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Example of New Imaging Techniques: The Heidelberg Retinal Tomograph (HRT)



10 MHz US vs 50 MHz USM (from U Dietrich, 4th edition, Vet Ophthalmol 2007)



Breed-related Eye Research

- DNA studies in dogs have been quite successful and now offer therapy possibilities.
- Large number of breed-related diseases in the dog are still not investigated.
- Potential inherited glaucoma and cataract breeds greatest opportunities.
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Retinal DNA Studies in the Dog

- Comparative Medicine at its best!
- Canine and human retinal diseases share similar genes.
- Many PRA and other retinal disease genes in the dogs have been identified.
- Aguirre, Acland, Petersen-Jones, and Kristina Narfström and others are important investigators.
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IN SUMMARY

- From its genesis in the early 1890s, veterinary ophthalmology has made significant advances.
- Our organizations (societies and colleges) continue to expand. We need to raise our 'goal-posts.'
- Cataract surgery continues to define the specialty.

SUMMARY- cont

- Based on our foundation of about one century, the future for Veterinary Ophthalmology is indeed bright!
- We need to continue to emphasize our basic ophthalmic sciences.
- Integration of private and academic teaching, residency and research programs should be a priority!

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