



A History of Anatomy at Cornell

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Historical Notes as Regards the Department of Anatomy

H. E. Evans

The Early Days

To set the stage for this review, Cornell University opened on Oct. 7, 1868 in South University building, the only building on campus (later re-named Morrill Hall). North University building (White Hall) was under construction but McGraw Hall in between, which would house anatomy, zoology and the museum, had not begun.

Louis Agassiz of Harvard, who was appointed non-resident Prof. of Natural History at Cornell, gave an enthusiastic inaugural address and set the tone for future courses in natural science. Included on the first faculty were **Burt G. Wilder**, M.D. from Harvard as Prof. of Comparative Anatomy and Natural History, recommended to President A.D. White by Agassiz, and **James Law**, FRCVS as Prof. of Veterinary Surgery, who was recommended by John Gamgee of the New Edinburgh Veterinary College and hired after an interview in London by **Pres. White**. Both Wilder and Law were accomplished anatomists in addition to their other abilities and both helped shape Cornell for many years. I found in the records many instances of their interactions on campus, which is not surprising when one considers how few buildings there were.

The Anatomy Department in the College of Veterinary Medicine has a legacy of anatomical teaching at Cornell that began before our College became a separate entity in 1896. Even after the Veterinary College opened, with a Department of Anatomy headed by **Grant S. Hopkins**, there was a separate Department of Histology and Embryology within the College for several years headed by **Simon H. Gage** and **Benjamin F. Kingsbury**. With the establishment of the Cornell University Medical College in New York City in 1898 another Department of Anatomy was established in New York City. At the same time that the Medical College opened, a two year medical course was offered in Ithaca (top floor of White Hall) paralleling the first two years in New York City. A local Ithaca surgeon, **Luzerne Coville** was a lecturer in anatomy and **Abram T. Kerr** taught human gross anatomy. For a few years all women candidates for the M.D. degree were required to spend their first two years in Ithaca. (While President Jacob G. Schurman was negotiating the establishment of the Medical College in N.Y.C. the first live Gorilla to be seen in America arrived in Boston with much fan-fare. It died within a week, and was purchased by the University for Prof. Wilder to study the brain.)

In 1902 the Department of Histology and Embryology, along with Profs. Gage and Kingsbury transferred from the Veterinary College to the Medical Division in the newly constructed Stimson Hall. Previous to this for a short time, medical students took histology and embryology in the Veterinary College but from 1902 to 1960 all veterinary students took histology and embryology in Stimson Hall from Profs. S.H. Gage, B.F. Kingsbury, **Howard B. Adelman** (PhD 1924) or **William A. Wimsatt** (PhD 1940). Others in medical Anatomy at the time Stimson Hall opened (1903) were J.H. Hathaway, W.M. Baldwin, J.P. Schaeffer, F.R. Wright and A.C. Durand. The Ithaca division did not thrive and in 1910 the Trustees reduced the medical course to a single year that could be combined with the senior year in Arts and Science.

When the Medical Division moved from Stimson Hall to New York City in 1939 the Professor of Neurology and Neuroanatomy, **James W. Papez** M.D., refused to leave Ithaca. He said he came here from Emory Univ. because of the beauty of the surroundings and had no intention of moving. Wisely he was allowed to continue his produc-

¹ Delivered as a Centenary Seminar January 24, 1994 at the request of Assoc. Prof. Cornelia Farnum, Chair of Anatomy.

tive research and graduate teaching in Stimson Hall which became the Department of Zoology. Papez had been a graduate student of Judson Herrick (founder of the J. of Neurology) in Minnesota and when he left he took Herrick's artist along as his wife. She illustrated all of his papers and his book on "Comparative Neurology". Papez was a kindly person and a fount of anatomical knowledge, he could sketch the brain "wiring" of a fish, dog, or human with equal facility. His special interest was the limbic system and the seat of emotions. Papez, "the man without a college", was asked to teach Human Growth and Development to Home Economics students and Physical Anthropology to Arts & Science students both of which he taught admirably (I took these courses in 1941.) He also taught me Human Anatomy as a tutorial on cadavers that were left behind in the Stimson Hall basement.

The Anatomy department of the Cornell Medical College in New York City was very active in animal research. **Charles Stockard** in 1936 established a Dog Farm in Peekskill, N.Y. where for six years he studied the anatomical characteristics of pure-bred dogs and their crosses. He saved photographs, skeletons and pituitary glands from all. (see "The Genetic and Endocrinic Basis of Form and Behaviour" published posthumously in 1941.) The collection was given to the Wistar Institute of Anatomy in Philadelphia and when they became a Virus Institute the collection was offered to our College in 1950. It was refused for lack of space, and then given to the Univ. of Pennsylvania Veterinary School. In 1990 the remains of the collection with its elaborate records were transferred to the State Museum of the University of Georgia (Athens) where it is well housed and available for study. **Joseph Hinsey** on the Cornell Medical Anatomy faculty published on the sympathetic nervous system before becoming Dean, **Jose Nonidez** first described "C" cells, and **G.N. Papanicolaou's** work in 1913 resulted in the "Pap" smear for cancer detection.

Louis Agassiz (1807-1873) on campus periodically 1868-72.

He was a French-speaking naturalist from Neufchatel Switzerland who advanced the theory of a general glacial epoch. He came to America on a scientific mission, funded by the King of Prussia, to see if the evidence of glaciation that he found in the old world was true in the new (it was). Agassiz was so charmed by the natural history and the vitality of the people he met in America that he accepted a professorship in the newly established Lawrence Scientific School at Harvard in 1847. Agassiz was the founder and Director of the Museum of Comparative Zoology (MCZ) at Harvard and led several collecting expeditions which included Cornell faculty. One of these trips during the Civil War is recorded as "A Journey in Brazil" published by he and his wife in 1868. Many of the plants and animals encountered were brought back to Harvard and some were given to Cornell. Agassiz, although a non-resident Prof. of Natural History at Cornell, was a most popular lecturer downtown and in Barnes Hall. His course of twenty lectures on Natural History so impressed Prof. and Mrs. Fuertes (Engineering) that they named their new-born son Louis Agassiz Fuertes (1874).

[All users of ethyl lab alcohol owe Agassiz a debt of gratitude for convincing Congress to waive the tax on alcohol for scientific purposes, which still holds today and saves us much money. Formaldehyde had not been discovered as yet and large quantities of ethyl alcohol or rum were needed for anatomical and zoological preservation. (I have some McGraw Hall specimens that were in rum.) It was not until 1900 that a Russian made formalin which at first was used as a Hospital disinfectant and only later as a tissue preservative.]

Agassiz founded the Anderson School of Natural History on Penikese Island (1872), the forerunner of the Marine Biological Lab at Woods Hole, Mass. and Wilder was on the summer faculty. Later in the year Agassiz wrote to Wilder (then at Cornell) about the need to improve domesticated animals and wondered whether someone could study the embryology of the horse as he had studied the snapping turtle. Agassiz's last public presentation was on "The structural growth of domesticated animals" before the Massachusetts State Board of Agriculture only twelve days before his death. He was hoping to secure funds for embryological studies.

For a review of the life and work of Agassiz see: "What we owe to Agassiz" by Prof. Burt G. Wilder, an address at the Centenary of Louis Agassiz delivered at the request of President Schurman in Barnes Hall, May 1907. (Reprinted in *The Popular Science Monthly*, Vol. LXXI, July 1907). Also "Agassiz and Cornell" by Prof. A.H. Wright in *Pre-Cornell and Early Cornell*, Studies in History #15 1953 published privately.

James Law FRCVS (1838-1921) - taught at Cornell 1868-1921.

A graduate of the Edinburgh Veterinary College in 1857 at age 19. He received a medal for the best exam in general and descriptive anatomy. In 1860 he became Prof. of Anatomy and Physiology and Materia Medica at the Edinburgh New Veterinary College founded by John Gamgee in 1857. Together they wrote *General and Descriptive Anatomy of Domestic Animals* published in 1861 with a second part in 1862. In 1865 the Edinburgh New Veterinary College moved to Bayswater, London and changed its name to Albert Veterinary College. Law remained on the faculty of Albert until 1867 when he joined the Cornell faculty.

A dissection room and an anatomical museum, with surgical specimens prepared by Wilder and Law, was built in 1870 on the site now occupied by Goldwin Smith Hall. This is where the Auzoux models, that Pres. White bought in France, were kept. About this time, on the hill where Rockefeller now stands, a house was built for Law, the first faculty house on campus. Law retired in 1908 after 40 years of teaching on a Carnegie Foundation service pension.

The anatomy books used in the course in 1875 included Chauveau's *Comparative Anatomy of Domestic Animals* and Gamgee and Law *Anatomy of the Domestic Animals*. In 1885 the anatomical preparator was Fred L. Kilbourne BVS who later became the Director of the US Vet Experiment Station in Wash., D.C.

Burt Green Wilder M.D.(1841-1925) taught at Cornell 1867-1925.

Student, assistant and colleague of Agassiz. A Harvard trained M.D. who served in combat as Assistant Surgeon of the "Fifty-fifth Massachusetts Infantry, Colored" during the Civil War (1863-65). He joined the Cornell faculty in 1867 and served until 1925. He was an outspoken critic of social vices and he was never without a stand on the issues of the day. His investigations ranged from spiders to man. When the Cornell Bear broke Prof. Comstock's arm, Wilder set it. Wilder was a President of the Association of American Anatomists (1898), and Chairman of the Anatomical Nomenclature Committee. He wrote profusely and incisively about which terms should be used for the Central Nervous System. He established the Cornell Brain collection, donated his own, and urged others to do likewise. (Comstock and several others did.)

Simon Henry Gage B.S. (1851-1944) at Cornell 1873-1944

Although Gage was a well-published anatomist, microscopist, and naturalist he had no advanced degree. He was a member of the original veterinary faculty and taught histology and embryology to veterinary students until 1908 at which time he retired on a service pension from the Carnegie Foundation supplemented by Cornell for life. He continued his research in Stimson Hall and was still hard at work on the 17th edition of his book *The Microscope* when I came to Cornell in 1940. His publications included gross anatomy of the cat, and life-history of lampreys. He and Wilder wrote *Anatomical Technology as applied to the Domestic Cat*. With H.P. Gage he wrote *Optic Projection. Principles, Installation, and use of the Magic Lantern, Projection Microscope, Reflecting Lantern, and Moving Picture Machine*.

In 1916 on his 65th birthday Gage's friends presented Cornell with an endowment for "The Simon Henry Gage Fellowship in Animal Biology". I held this fellowship at the Woods Hole Marine Biological Lab in the summer of 1947 for the "Invertebrate" course. When I called the Graduate School to inquire about this fellowship they said there was no money left! Evidently they violated the endowment and spent the principal as well as the income. (For profiles on Gage see: Kingsbury. 1931. *Am. J. Anat.* 48:3-6 & Adelman 1945 *Anat. Rec.* 91:1-2.)

Pierre A. Fish (1865-1931) DSc, DVS, DVM, MD was Asst. Prof. of embryology with Gage on original faculty, spent summers teaching at Woods Hole. Later was in Physiology/Pharmacology. He published on the brain of fur seals, wrote three books, was editor of *The Cornell Veterinarian*, and died as Dean (1929-31) of the Vet College.

Benjamin F. Kingsbury - PhD '95 M.D. '04 was an Instructor of Anatomy on the first faculty of the Veterinary College in 1895 and later Professor and Head of the Dept. of Histology and Embryology of the Medical College in Stimson Hall.

Howard B. Adelman (1898-1988), PhD '24 under Kingsbury, was one of Cornell's greatest scholars. He was at Cornell for 72 years, 67 of them as a member of the faculty. He served as chairman of Zoology from 1944 to 1959. Adelman was an experimental embryologist who studied cyclopia and other features in salamanders and birds. Very early in his career he began collecting rare books dealing with the history of embryology and his entire collection (5,000+ volumes) is now in the History of Science Collection at Cornell. He taught embryology to veterinary students from 1924 to 1960. The Cornell Press published his *Hieronymus Fabricius* in 1942 and his 5 volume internationally acclaimed *Marcelo Malpighi and the Evolution of Embryology* in 1966 the year he retired. Adelman's graduate students who also taught veterinary students included **William Wimsatt**, **William Montagne**, **Harold Parks**, **Arlene Seaman**, **Nick Gerald** and **Duncan Chiquoine**.

Perry W. Gilbert AB '34 Dartmouth, PhD 1940 Cornell is now Prof, emeritus in Neurobiology & Behavior at Cornell and Emeritus Director of the Mote Marine Laboratory in Florida. When I first arrived at Cornell in 1940 he had just received his PhD with a thesis on the morphology of burrowing sciurids (woodchuck, etc.) and his major professor, **William Senning**, had abruptly resigned over a salary dispute. Gilbert was appointed Instructor of Comparative Anatomy and hired me as a student technician. Within two years I was called to active duty by the Army and when I returned in 1946 he took me on for a PhD as a Teaching Assistant and summer Instructor in Comparative Anatomy. In 1950 I moved from Stimson Hall to James Law Hall as Asst. Prof. of Veterinary Anatomy. In 1967 when Gilbert was offered the Directorship of the Mote Marine Laboratory in Florida I taught his course along with my own while he tried it out. He liked it and made a unique arrangement with Cornell: he retained his Professorship (without salary) and became the Director of the privately endowed Mote Marine Laboratory in Sarasota. The Mote lab provided on-site support for Cornell graduate research and Gilbert returned each year to lecture. He held this dual appointment until he retired from both in 1978. His early work was on the development of head cavities and eye muscles in mammals and later work concerned structure and function in sharks. (During the years 1944 to 1946 Gilbert cared for a new-born rattlesnake that I sent from Fort Sill, Oklahoma. When I returned to Cornell in 1946 the snake was three feet long and became an excellent demonstration for envenomation and feeding behaviour that continued at the Veterinary College until the snake died in 1963 at age 19.

William A. Wimsatt (1917-1985). PhD '43 with Adelman. Was appointed Instructor of Anatomy at Harvard and returned to Cornell as Asst. Prof. of Zoology in 1945 and was made Prof, in 1951. He taught histology and embryology to veterinary students from 1945 to 1960 and was a member of the Section of Genetics, Development and Physiology. He collected, studied and wrote about vampire bats some of which he maintained for 25 years. Wimsatt's early work was on birds with Arthur Allen and much of his later work involved placentation. **Prof. H.P.A. deBoom** DVM from Onderstepoort, South Africa came to study with him in 1951 and subsequently returned to teach embryology and applied anatomy in the veterinary college as sabbatical replacements.

Marcus Singer taught neuroanatomy in Zoology for several years after Papez retired. He produced a large brain atlas for the dog based on three Beagles. Vet anatomy has a full set of every tenth original slide. Harold Parks was the next to teach neuroanatomy in Stimson Hall before going to Kentucky.

Other faculty on campus who published on anatomy are: **Kenneth Kennedy** of Ecology and Systematics (primates), **Antonie Blackler** Genetics & Development (embryology), **Andrew Bass** Neurobiology and Behaviour (fish neuroanatomy), **Deedra McClearn** Ecology and Systematics (mammalian functional anatomy), **Ari vanTienhoven** Emeritus (bird reproduction), **Robert Silver** Physiology (histology), **Timothy Devoogd** Psychology (bird brain), **Robert Foote** Emeritus (mammalian embryos) and **John Chiment** Asst. Dean Arts & Sciences (dinosaurs).

The first Department of Anatomy in the Veterinary College (1896) had one faculty member, **Grant Sherman Hopkins**. He had been a student assistant in the Department of Natural History during his senior year. Upon graduation with a BS in 1889 Hopkins was appointed Instructor in Anatomy in the Department of Natural History. He received a Doctor of Science degree from Cornell in 1893 (under Gage) with a thesis on the digestive tract of lungless salamanders. When the Veterinary College opened in 1896 Hopkins, who was teaching for Gage, was appointed Assistant Professor of Anatomy and Head. While in this position he enrolled, by special permission, as

a student in the Veterinary College and received the DVM in 1900. (This allowance for taking an advanced degree while on the faculty was discontinued shortly afterward.) Hopkins was made a full Professor in 1903. He had an illustrator (Redwood) also prepare drawings of his dissections in color and published several well illustrated Guides for the dissection of the horse and cow. He continued to come to his office in James Law Hall after his retirement in 1934 until his death in 1952. He was fun to visit because he enjoyed telling stories of student pranks. I remember his frugality of opening letter envelopes and flattening them under a rock on his desk. I once offered him a note pad but he saw no reason to waste the inside of envelopes.

Cornell University and the Veterinary College

Although Cornell University was chartered in 1865 it did not open until October 1868. The founder, Ezra Cornell, had a vision of “an institution where any person can find instruction in any study”. He appointed Andrew D. White as President and sent him to Europe to recruit faculty. As legend has it, Cornell shouted to White as the ship pulled away from the dock “don’t forget the horse doctor.” After an interview in London, Dr. James Law, a graduate of the New Edinburgh Veterinary College, who had taught in Edinburgh and London and was teaching in Belfast, was hired by President White as Professor of Veterinary Surgery. This was the first time in an American university that veterinary medicine was given equal rank with the sciences and the humanities.

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Thus a veterinary degree was granted by Cornell University in 1876 before the State of New York, under Governor Roswell P. Flower, established the Veterinary College in 1894 as the first “contract college” at Cornell. This new entity, with a faculty of eight, moved into a new building and welcomed its first class in 1896. (Other contract Colleges at Cornell are the College of Agriculture and Life Sciences, and the College of Human Ecology, which are also State supported².)

The first Faculty for the Veterinary College was appointed by the Trustees of Cornell University in 1896 when the College took its first class and consisted of the following:

Jacob Gould Schurman, AM, DSc, LL.D. President. (Note that the President was a member of the College faculty and still is to this day. If he attends a College Faculty meeting he is entitled to chair the meeting.)

James Law, FRCVS - Director of the State Veterinary College and Prof. of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science, and Parasitism. (Note that his title was Director not Dean and this continued for quite a while.)

Simon Henry Gage BS - Prof. of Microscopy, Histology, and Embryology. (He was the owner of one of the four microscopes at Cornell which were rare items at that time.)

Veranus Alva Moore BS, MD - Prof. of Comparative and Veterinary Pathology and Bacteriology, and of Meat Inspection. (He later served as Dean of the College and had a building named after him (1938) on our old campus now part of the School of Industrial and Labor Relations.) Moore’s son became Director of the Cornell Health Clinic and Hospital.

Pierre Augustine Fish BS, DSc, DVS - Asst. Prof. of Veterinary Physiology, Materia Medica, and Pharmacy.

Grant Sherman Hopkins BS, DSc - Asst. Prof. of Veterinary Anatomy and Anatomical Methods. (He taught for 38 years and was around as emeritus for 18 years. He died in 1952.)

Benjamin Freeman Kingsbury AB, PhD - Instructor in Microscopic Methods, Histology, and Embryology. (He became a professor in the Medical College and was the major advisor for H.B. Adelmann’s thesis. Adelmann taught Embryology to veterinary students for many years.)

Later in the year an additional appointment was made:

Walter Long Williams (no degree) - Prof. of Surgery and Obstetrics. (He wrote a Veterinary Obstetrics book which was a standard reference for many years.) Thus, the first faculty of our College had two veterinarians, one physician and an assortment of others one of whom had no degree. What could be more democratic? It would never happen today.

2 Later, in 1945, the New York State School of Industrial and Labor Relations was added.

Department of Anatomy

Since an anatomist is writing this summary, colleagues of the discipline who were founders, are claimed. Four of the original eight faculty members of the Veterinary College qualify as anatomists: Law; Gage; Hopkins; and Kingsbury.

In January 1934 the alumni of the College hosted a dinner in honor of Dr. Hopkins retirement. Dean W.A. Hagan presided and three of the addresses were obtained for publication, see: *Cornell Vet.* XXIV 1934 p.172-189 "The First Faculty of the New York State Veterinary College" by Gage, Hopkins, and Udall.

James Law had written an anatomy book and was Prof. of Anatomy and Physiology in Belfast when he came here. Although he received his veterinary degree in Edinburgh he did not come to Cornell from Edinburgh as is often said. Belfast should get the credit for having him on their faculty and we took him away from them.

Simon Henry Gage (1851-1944)

Although Gage was a well published anatomist, microscopist, and naturalist he had no advanced degree. His book on "The Microscope" went through 18 editions and was world famous. He was a member of the original veterinary faculty and taught histology and embryology to veterinary students until his retirement in 1908. Technically, he was not in the Department of Anatomy since he had organized an independent Department of Histology and Embryology in the Veterinary College in 1896. This entity was transferred in 1902 to Stimson Hall, the new home of the Ithaca Division of the Cornell Medical College.

It was Gage who chose Hopkins as his assistant and recommended him for the Chair in Anatomy when the Veterinary College opened in 1896. Gage interacted with his former student Hopkins and the Anatomy Department of the Veterinary College for many years and was a prolific writer, editor, and member of many anatomical groups. (For profiles on Gage see: Kingsbury 1931 *Amer. J. Anat.* 48:3-6 and Adelman 1945 *Anat. Rec.* 91:1-2.) Gage still came to the office in Stimson Hall when I entered Cornell University in 1940.

Benjamin Kingsbury, an Instructor in Anatomy on the first faculty of the Veterinary College, followed Gage as Head of the Dept. of Histology and Embryology of the Medical College in Stimson Hall. Veterinary students continued to receive instruction in Embryology and Histology in Stimson Hall until 1960 when it was transferred to the Veterinary College.

The first Department of Anatomy in the Veterinary College (1896) had one faculty member, Grant Sherman Hopkins. He had been a student assistant in the Department of Natural History during his senior year. Upon graduation with a BS in 1889 Hopkins was appointed Instructor in Anatomy (in the Department of Natural History). He received a Doctor of Science degree from Cornell in 1893 (under Gage) with a thesis on the digestive tract of the gar fish, *Lepisosteus*. When the Veterinary College opened in 1896 Hopkins, who was teaching for Gage, was appointed Assistant Professor of Anatomy and Head. While in this position he enrolled, by special permission, as a student in the Veterinary College and received the DVM in 1900. He was made a full Professor in 1903. Hopkins published several well-illustrated Guides for the dissection of the horse and cow. He continued to come to his office in James Law Hall after his retirement in 1934 until his death in 1952.

Embryology and Histology was taught "outside" of the Veterinary College by several professors on the lower campus who were members of the Medical College or Arts College faculty: Gage and Kingsbury transferred from the Veterinary faculty to the Medical College faculty in Stimson Hall. Professors Howard B. Adelman and William A. Wimsatt in the Dept. of Zoology, College of Arts and Sciences, inherited these courses from the Medical College and taught them until 1960 when the Veterinary College appointed Prof. Al Stinson to teach of Histology and Embryology to veterinary students.

Summary: Veterinary College teaching faculty in Anatomy.

Grant Sherman Hopkins (1865-1952) BS Cornell 1889, DSc Cornell 1893, DVM Cornell 1900. Head 1896-1934.

Earl Sunderville (1886-1958) DVM-taught from 1908 to 1947. Head 1935-1947.

Malcolm Eugene Miller (1909-1960) BS and DVM Cornell, 1934, MS Cornell 1936, PhD Cornell 1940. Instructor 1934-40, Asst. Prof. 1940-45, Assoc. Prof. 1946-47, Secretary of the College, Prof. & Head 1947 until his death in 1960.

Present Faculty

Robert E. Habel – DVM Ohio 1941, MS Ohio 1947, MVD Utrecht 1956. Asst. Prof. 1947, Assoc. Prof. 1953, Prof. and Head of Anatomy, 1960-76. Emeritus 1978.

Howard E. Evans – BS (in absentia) Cornell 1944, PhD Cornell 1950, Asst. Prof. 1950, Assoc. Prof. 1953, Prof. 1960. Secretary of the College 1960-72. Chairman of Anatomy 1976-86. Cornell Trustee 1981-86. Prof. Emeritus 1986.

Alexander deLahunta – DVM Cornell 1958, PhD Cornell 1963, Inst. 1960-63, Asst. Prof. 1963-71, Assoc. Prof. 1966-73, Prof. 1973. Director of Teaching Hospital and Chairman of Clinical Sciences 6 & 9 yrs. overlapped. Chairman of Anatomy 1986-1990.

Wolfgang O. Sack – DVM Toronto 1957, PhD Edinburgh 1962, DMV Munich 1971. Assoc. Prof. 1964, Prof. 1973, Emeritus 1991.

John F. Cummings – BS Cornell 1958, DVM Cornell 1962, MS Cornell 1963, PhD Cornell 1966. Asst. Prof 1967, Assoc. Prof. 1971; Prof. 1977.

Drew M. Noden – BA 1966, PhD 1972 Wash. Univ. (St. Louis). Assoc. Prof. 1979, Prof. 1985

Cornelia Farnum – BA Stanford 1964, DVM Minn. 1982, PhD Wisc. 1985, Asst. Prof. 1987, Assoc. Prof. 1990, Chair of Anatomy 1991.

John Hermanson – BS Mass. 1975, MS N. Az. 1978, PhD Fl. 1983. Asst. Prof. 1988, Assoc. Prof. 1993.

John E.A. Bertram – BS U. British Columbia 1981, MS U.B.C 1984, PhD Chicago 1988. Asst. Prof. 1992.

Mary S. Hackett – BS Mich. State 1974, DVM Mich. State 1978, PhD Cornell (in progress). Lecturer in Anatomy 1991.

Linda A. Mizer – DVM Ontario 1980, MS Ohio 1983, PhD Ohio 1987. Senior Lecturer in Anatomy 1991.

Susan Dawson – BA 1988 Rutgers, PhD 1993 Penn.

The Anatomy department has distinguished itself by first-rate teaching and the publication of well-illustrated anatomical guides and books that are known worldwide. Beginning with the Hopkins guides to the dissection of the horse and cow, followed by Miller's Guide to the Dissection of the Dog, Habel's *Guide to the Dissection of Ruminants*, Rooney, Habel & Sack's *Guide to the Dissection of the Horse*, Habel's *Applied Anatomy*, Sack's *Guide to the Dissection of the Horse*, Evans *Guide to the dissection of the Chicken*, Evans & deLahunta's *Guide to the Dissection of the Dog*, Noden and deLahunta's text on *Domestic Animal Embryology*, deLahunta's *Neuroanatomy*, Dyce, Sack and Wensing's *Textbook of Veterinary Anatomy*, and Evans' revision of *Miller's Anatomy of the Dog* (3rd edition). Several faculty have been involved on international nomenclature committees, and three of them have served as

President of the World Association of Veterinary Anatomists. Some are or have been editors of journals. Several have written chapters for books or translated books. Publications have been a hallmark of the department and we are known for them. The hiring of a Medical Illustrator in 1947 by Malcolm Miller began the era of quality anatomical illustrations from the Dept. of Anatomy by a series of illustrators: Pat Barrow, Marion Newson, Lew Sadler, Bill Hamilton, and Michael Simmons. Drew Noden came with federal grant support that enabled the department to grow and continued to have an important effect.

The number of international faculty we have had in residence over the years has provided an outstanding opportunity for students and faculty to broaden their perspectives and learn new ways to think and teach. We owe much to the great diversity we have been exposed to at the College. The Anatomy department has had the following visiting teachers on its faculty.

Visiting Faculty of Anatomy

H.P.A. de Boom (Pretoria) 1952, 1961 & 1975

Karel van de Watering (Utrecht) 1957

Fritz Preuss (Berlin) 1960 & 1974

Jean Pierard (St. Hyacinthe, Quebec) 1961-62

Krzysztof Swiezynski (Prague) 1964 & 1978

Keith Dyce (London) 1964

George Benson (Liverpool) 1964

Vincent Molony (Liverpool) 1965

Robert Aitkin (Glasgow) 1965

Thomas McGeady (Dublin) 1965

John Grandage (Perth) 1966

Nils Bjorkman (Denmark) 1967

Michael Bryden (Sydney) 1967

Herman Meyer (Zurich 1956 & Colorado State 1967)

Bertil Henrickson (Helsinki) 1967

Michael Dore (Ireland) 1969

FuMing Wu (Taiwan) 1969

John Kemmler (Texas) 1970

Ronald Hullinger (Purdue Univ.) 1974

Thomas McGeady (Dublin) 1975

Raymond Williams (Tuskegee Univ.) 1974

Vernon Brightman (Penn. Dental School)

Gregory Chibuzo (Nigeria) 1977

Jean Kratzing (Queensland) 1977

Chuanpis Soponhirunrux (Bangkok) 1978

Patrick McCarthy (Australia) 1978

Osman Abdalla (Sudan) 1979

Lynn Oliphant (Saskatoon, Can.) 1979

Hannon Gloobe (Israel & Costa Rica) 1982

Yong San Huang (Taiwan) 1983

Ziquing Liu (Tian, China) 1983

James Petras (Walter Reed Hospital) 1984

Masao Asari (Japan) 1984

Sanet Kotze (Pretoria) 1986

Abraham Bezuidenhout (Pretoria) 1991

James Ingram (Colorado Vet school) 1993

Shinichi Mikami (Japan) 1993

Liu Jiwu (Beijing) 1993

A brief chronology of College appointments³ in Anatomy follows:

1896–1913

Grant Sherman Hopkins - Prof. and Head
Simon Henry Gage – Prof. of Microscopy and Embryology
Dr. Scammel and Mr. Ilston Demonstrators in 1898-99

1914–1918

Earl Sunderville - Asst. Professor
Dr. Howard E. Johnson- Instructor
Dr. Charles Griffin - Assistant
H. C. McCarthy - Student Assistant
Dr. Alfred T. Baeszler – Assistant
Erwin Moore- Assistant
E. Stanley Stone – Assistant
G. K. Cooke - Assistant

1918–1933 - All of the following were Student Assistants

Clyde L. Kern
Andre R. DeMott
H. C. Parker
J. P. McIntosh
Joseph A. Thomas
Fredrick G. Caslick
Henry R. Miller

1934

Prof. Hopkins became Emeritus because of the age rule

1935–1936

Prof. Earl Sunderville was made Head of Anatomy
Dr. Malcolm E. Miller was appointed Instructor.

1936–1939

Bernie F. Favata – Student Assistant (after his DVM he became an MD & a brain surgeon in Rochester)
Ralph Loomis - Student Assistant

1939–40

Prof. Earl Sunderville
Instructor Dr. Malcolm Miller
No Assistants

1941

Malcolm Miller – Assistant Professor

3 See the accompanying collection of twenty Faculty Memorial Statements for additional insights.

1948–1949

Malcolm Miller - Prof. & Head

Robert Habel- Assistant Professor

John Leahy - Instructor

George Christensen - Instructor 1948-52 DVM 1948, M.S. 1949, PhD 1952

(As a DVM and Vet School grad student he took Comparative Anatomy in the College of Arts and Sciences where grad student H.E. Evans was his lab instructor. It was Christensen who recommended Evans, about to get his PhD in Comparative Anatomy, to Dr. Miller for the new Asst. Professorship that had just been created in the Vet College in 1950. It was a lucky circumstance that Evans major professor, Perry Gilbert, was a neighbor of Dean Hagan and could recommend him in person. At the end of summer school Evans packed his demonstration specimens and live rattlesnake and moved across the street to the Veterinary College. (The Diamond -backed rattlesnake, which lived for 19 years was caught in Oklahoma in 1944 while Evans was a 2nd Lt. in the Army teaching Truck Driving. It was sent to Perry Gilbert who cared for it until Evans returned in 1946.)

1950–51

Robert Habel- Associate Professor

Howard Evans- Assistant Professor

George Christensen went to Iowa Vet College

1952

Grant Sherman Hopkins died. He was the first Anatomy Professor on the original faculty of the Veterinary College.

1953

Howard Evans – Associate Professor

Hermann Meyer - DVM Zurich, Instructor

1956–58

Robert McClure- DVM Iowa '56 Instructor

Herman Meyer – DVM Zurich '53, PhD Cornell 1956 Acting Asst. Prof.

Karel van de Watering- DVM Utrecht Acting Asst. Prof.

1959–61

Micro and Embryology transferred to Vet College from Zoology Dept.

Al Stinson DVM 1959 Georgia appt. Asst. Prof. (at Cornell until 1964)

Malcolm Miller died 1960

Robert Habel – Assoc.Prof. and Head

Howard Evans- Assoc. Prof. and Secretary of the College

Fritz Preuss - (Berlin) Visiting Prof.

July 1st 1960 Habel and Evans promoted to Professor

Bob McClure resigned to go to Missouri

Alexander deLahunta- DVM Cornell 1957 Instructor Oct.1, 1960

Adrian Morrison DVM Cornell 1959 Teaching Asst.

1961–63

Robert Habel on leave at Utrecht Spring Term

Alexander deLahunta taught Applied Anatomy
Howard Evans - Acting Head
H.P.A. deBoom –DVM Pretoria, S. Africa, Visiting Prof. of Embryology and Large animal Gross anatomy
Benjamin Hart DVM Minn. Acting Asst. Prof.
Jean Pierard - DVM St. Hyacinthe, Quebec, Teaching Asst.

1963–64

Alexander deLahunta Asst. Prof. Oct.'63
Wolfgang O. Sack DVM Gulph. Ont. hired as Assoc. Prof.
Judith Scanlon - Teaching Asst.
John Cummings- Teaching Asst.
Asst. Prof. Al Stinson went to Univ. Michigan Vet School

1964–65

Howard Evans -sabbatical in Dept. of Epidemiology, Medical School, Univ. of Pennsylvania and Sheep
Cyclopia project with Wayne Binns, Logan, Utah
Alexander deLahunta -Acting Secretary of the College
Keith Dyce (London) Visiting Prof. of Dog Gross Anatomy
George Benson (Liverpool) Visiting Prof. of Histology
Krzysztof Swiezynski (Prague) Teaching Asst.

1965–66

Profs. Habel, Evans, Sack, Alexander deLahunta made Assoc.Prof,
Robert Aitken (Glasgow) Visiting Assoc. Prof. of Histology
Thomas McGeady (Dublin) Visiting Lecturer
Vincent Molony (Liverpool) Teaching Asst.
Bruce Gray- DVM Cornell Teaching Asst.

1966–67

Habel, Evans, Sack, deLahunta
John Cummings Asst. Prof. Oct. 1, 1967
Nils Bjorkman (Copenhagen) Visiting Assoc. Prof. of Histology
John Grandage (Perth) Visiting Prof.
Vincent Molony (Liverpool) T. Asst.
Bruce Gray DVM Cornell T. Asst.

1967–68

Habel on sabbatical in Vienna
Evans- Acting. Head
deLahunta, Sack, Cummings
H. Meyer (Colorado) Visiting Prof, of Applied Anat.
Michael Bryden (DVM & PhD Sydney) - Instructor
Bruce Gray T. Asst.

1968–69

Same as above except: Habel back Meyer gone to Colorado

1969–70

Same as above with addition of:
FuMing Wu (Taiwan) Teaching Asst.

Michael Dore (Ireland) Teaching Asst.
Ari vanTienhoven- Visiting Prof. from Poultry Dept.
Jack Munnell - Fellow in Electron Microscopy

1970-73

Munnell to Georgia 1970
John Kemmler (Texas) Visiting Prof. 1970-71
Cummings to Assoc. Prof. in 1971

1973-74

Habel, Evans, deLahunta, Sack, Cummings

1974-75

Ronald Hullinger (Purdue) Visiting Prof. of Histology
Fritz Preuss (Berlin) Visiting Prof.
Raymond Williams (Tuskegee) Visiting Prof.

1975-76

Evans Chairman of Dept. (Habel resigned Chair. by mail)
Vernon Brightman (U. of Penn Dental) Visiting Prof.
H.P.A. deBoom (S. Africa) Visiting Prof. of Applied Anatomy
Tommy McGeady (Ireland) Visiting Assoc. Prof.

1977-78

deLahunta - made Prof., Dir. of Teaching Hospital, and Chairman Dept. of Clinical Sciences (while retaining anatomy. teaching)
Jean Kratzing (Sydney) Visiting Lecturer
Gregory Chibuzo (Tuskegee) Visiting Lecturer

1978-79

Habel retired as Emeritus
Evans on sabbatical in Hawaii, Indonesia, Thailand & Australia.
Cummings- to Professor & Acting. Chairman for Evans
Patrick McCarthy (Australia) - Visiting Assoc. Prof. of Appl. Anatomy
Chuanpis Soponhirunrux (Thailand) Visiting Assoc. Prof.
Krzysztof H. Swiezynski (Poland) Visit. Assoc. Prof.

1979-80

Cummings promoted to Prof.
Noden appointment Associate Professor
McCarthy arranged to go back to Australia w/o consulting us
George Ross - Acting Prof. of Applied Anatomy
Lynn Oliphant (Saskatoon) Visiting Assoc. Prof. Histology
Osman Abdalla (Sudan) Visiting Prof.

1980-83

deLahunta - to Prof. of Anatomy & Ch. Clinical Sciences no longer combined w/ Dir. of Teaching Hospital.
Osman Abdalla (Sudan) Visiting Prof.
Melissa Behr - DVM Cornell 1979 Instructor
Hanania Gloobe (Costa Rica) - Visiting Prof.
Adele Martel - Post Doctoral Fellow

1983-84

Gloobe went home to Costa Rica
 Bill Hamilton- Med. Illust. left
 Michael Simmons appoint. Med. Illust.
 Yong San Huang (Taiwan) Visiting Fellow
 Ziqing Liu (China) Visiting Fellow

1984-85

Evans Chair., Sack, deLahunta, Cummings, Noden.
Masao Asari (Japan) Visiting Asst. Prof.
Deedra McClearn PhD Harvard, Res. Assoc.
Adele Martel PhD Wash. Univ. Lecturer
Yong San Huang (Taiwan) Visiting Fellow
James Petras Walter Reed Army Med. Center - Adjunct Prof.

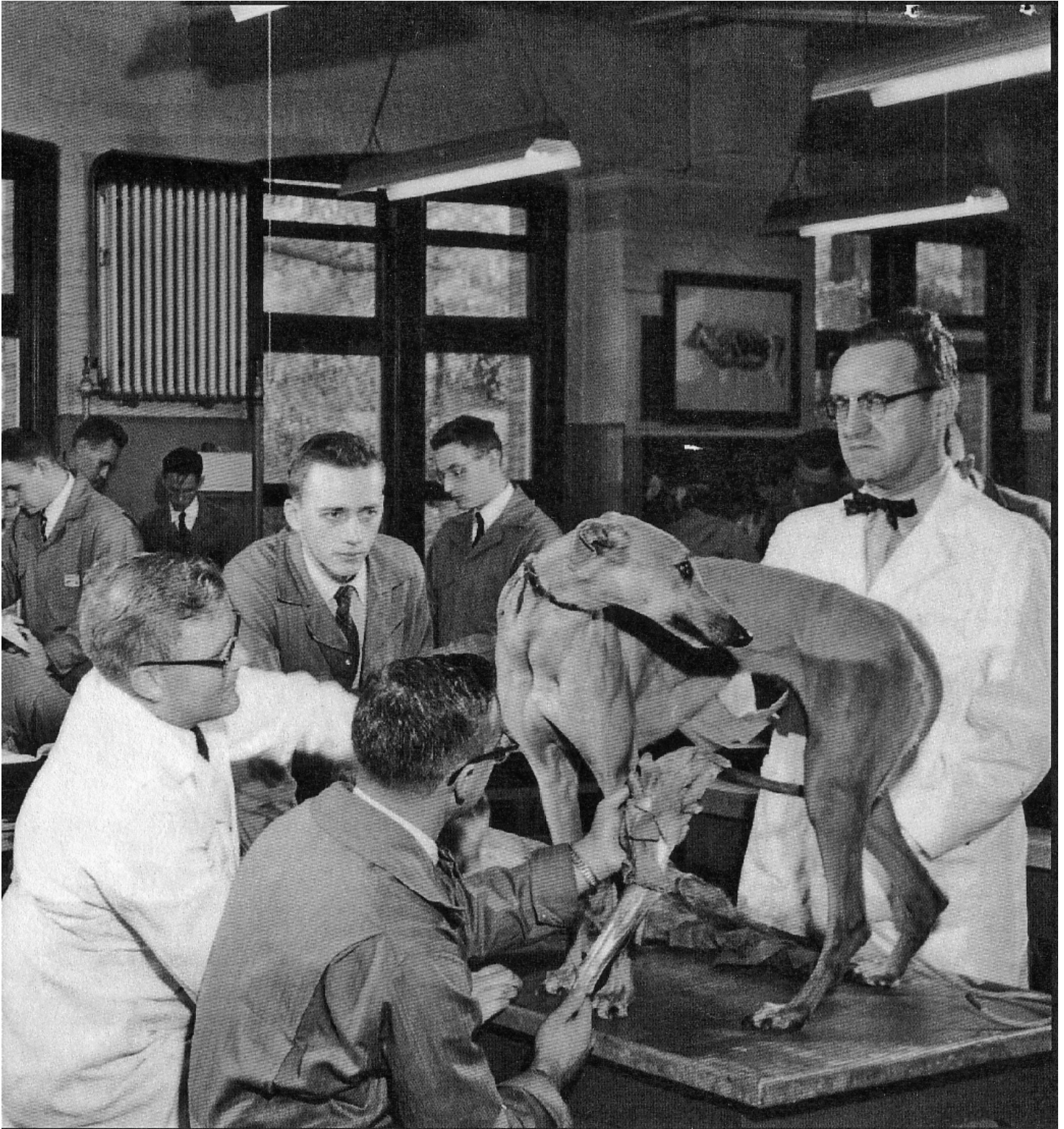
1985-89

Lora Miller DVM Cornell 1985 Instructor
Howard Evans retired Aug. 1986
Alexander deLhanta named chair.
John Hermanson PhD (Florida, 1983) Asst. Professor 1987, Assoc. Professor 1993
Sanet Kotze BVSc (Pretoria) Visiting Lecturer
Debra Dennet DVM Cornell 1987 Lecturer
Christine Miller DVM Cornell 1989 Instructor

1990-93

Cornelia Farnum DVM (Minn), PhD (Wisc.) Named Chair of Anatomy
 Profs. deLahunta, Noden, Hermanson, Prof. Sack retired
 Abraham Bezuidenhout DVM 1982 (Pretoria) Visiting Professor on Woodchuck Project
 John Bertram MS U. British Columbia 1981; PhD Chicago 1988; Asst. Professor 1992-98
 Mary S. Hackett DVM Mich. 1978; Lecturer
 Linda Mizer DVM Ontario Vet. College Canada 1980; MS 1983; PhD Ohio 1987; Lecturer

~~~~~  
**A Collection of Anatomical Images by H.E. Evans** regarding the publication of *Miller's Anatomy of the Dog* published earlier by the Saunders Co., now Elsevier publishers.



A class in the old Vet College (now site of the I&LR School). Instructors are Herman Meyer (seated) and Professor Malcolm Miller (1954).

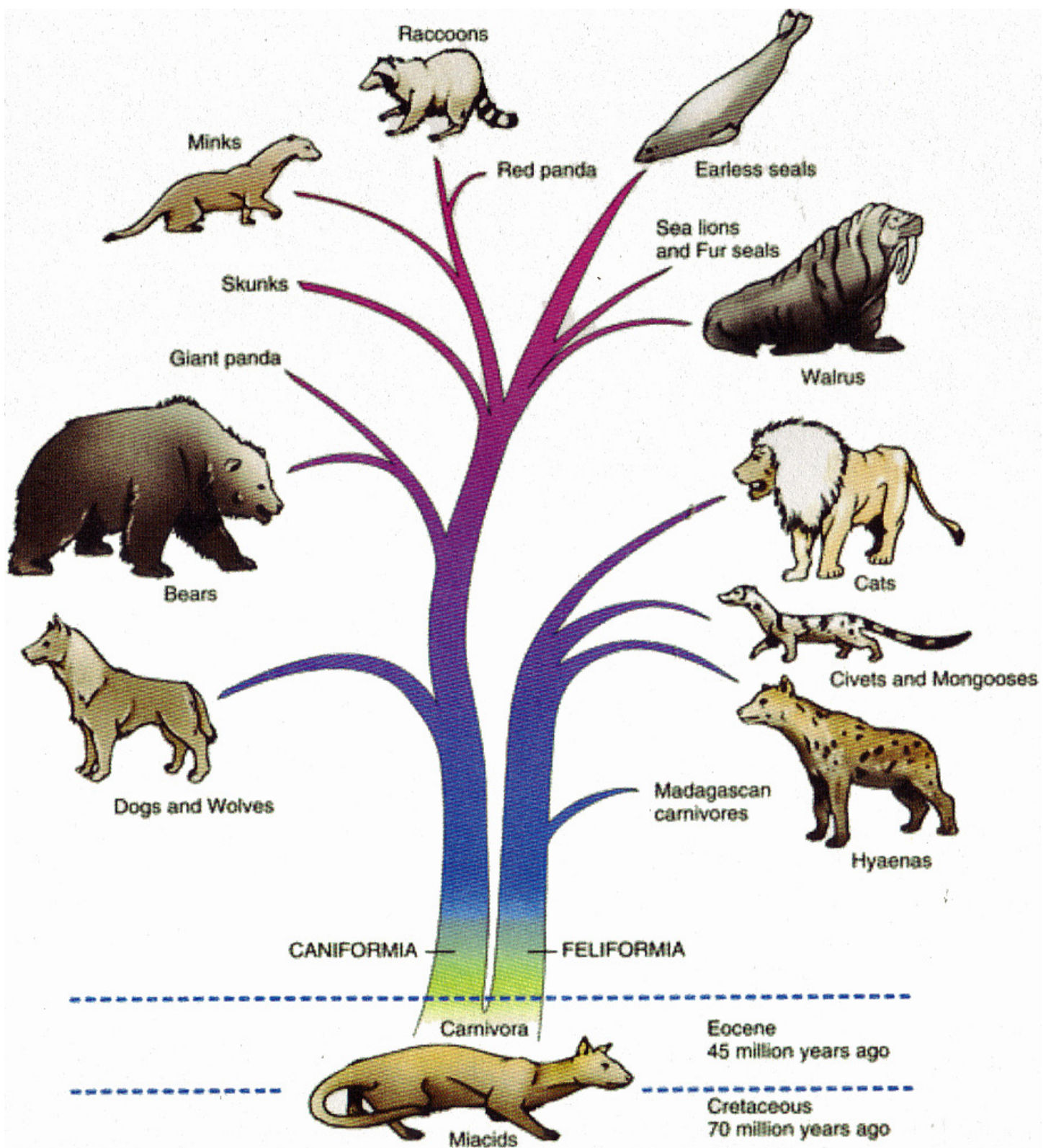




**Marion Newson, Medical Illustrator (1955).**

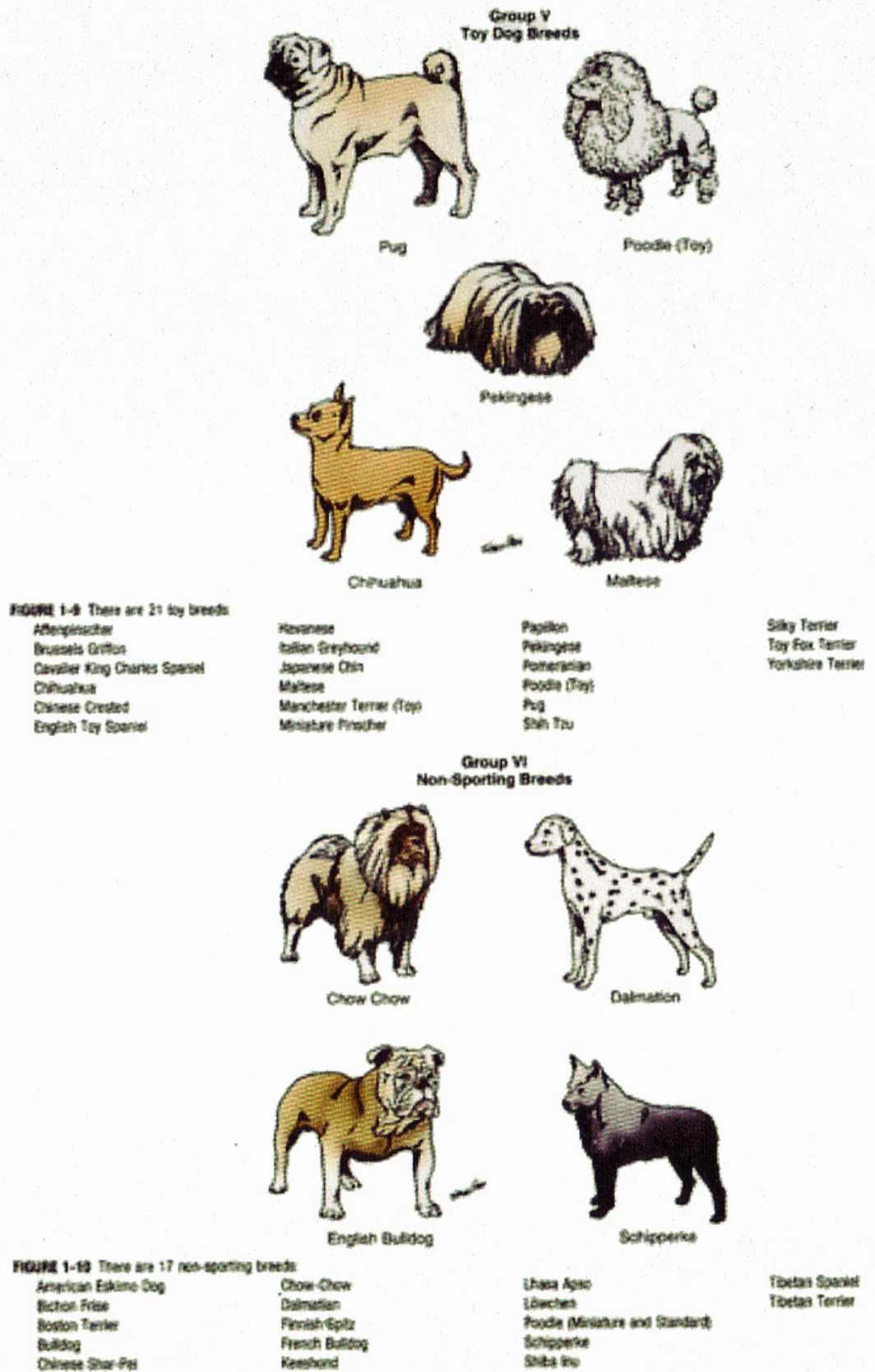
Newson was a nurse in the U.S. Army during 'The North African Campaign.' She went to art school at the Mass. General Hospital and was hired by the Vet Anatomy Department. After her graduation in 1952, she worked for the Dept. of Vet Anatomy for 26 years.





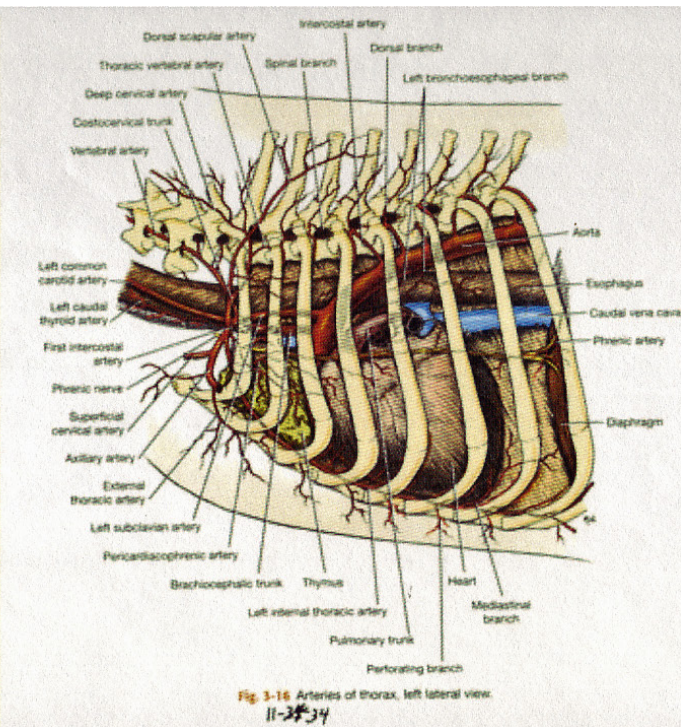
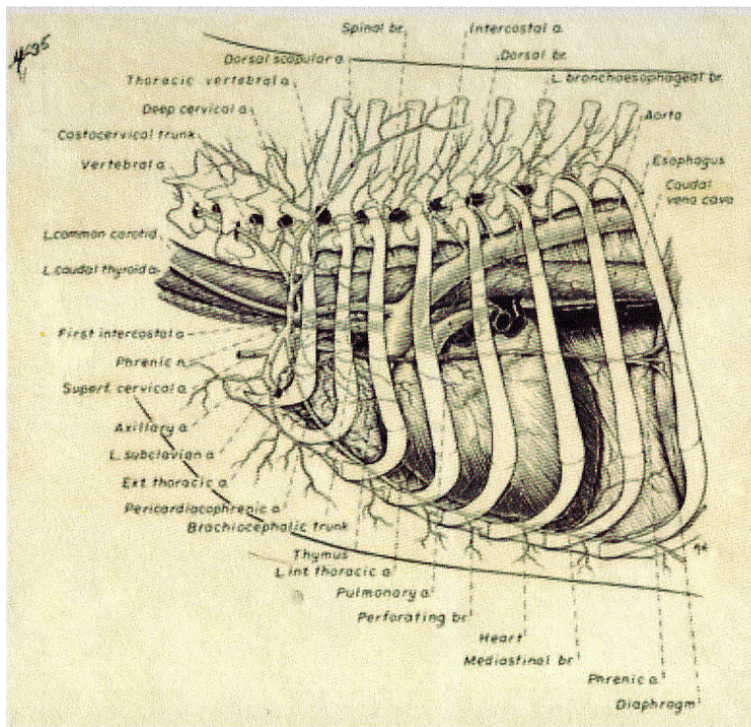
**FIGURE 1-1** The family tree of the order Carnivora. In addition to the domestic dog and cat, Madagascan carnivores include three species of civets (Viverridae): fosa (Cryptoprocta), striped civet (Fossa), falanouc (Eupleres) and five species of mongooses (Herpestidae).

The family tree of the order Carnivora. In addition to the domestic dog and cat, Madagascan carnivores include three species of civets (Viverridae), fosa (Cryptoprocta), striped civet (Fossa), falanouc (Eupleres) and five species of mongooses (Herpestidae). (A plate from *Miller's Anatomy of the Dog* by Evans, 1993.)

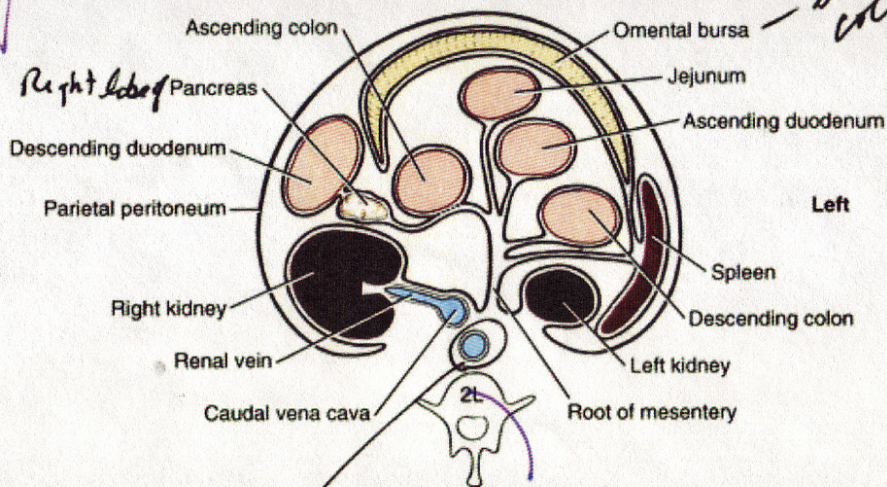


Examples of two groups of dogs recognized as breeds by the American Kennel Club.





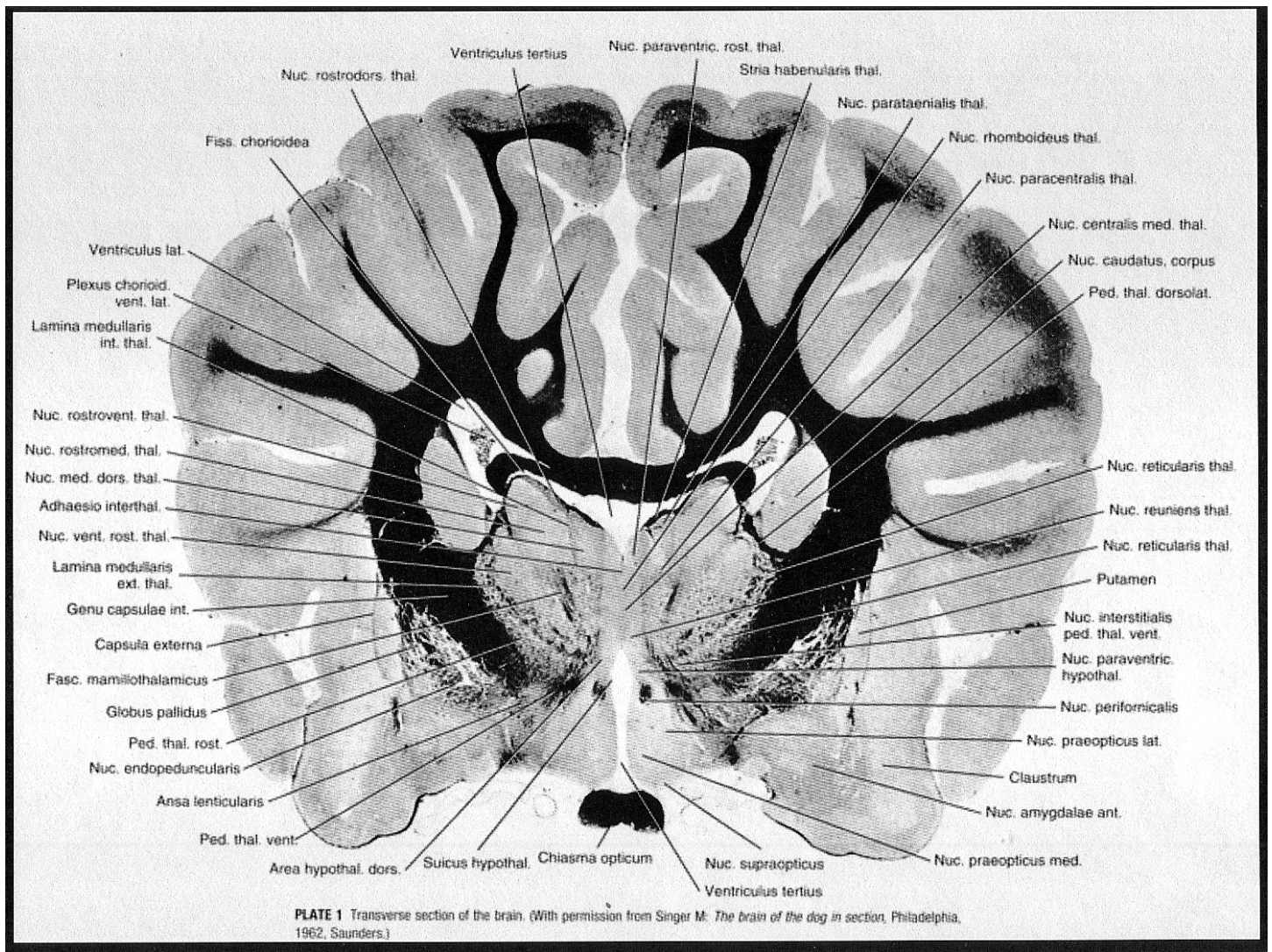
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| Fig. #<br><b>4-10</b>                                                                               | Document name<br><b>B0246-04-10</b>                                  | Initials<br>_____<br>Date<br>_____                                                            |
| Artist<br><b>Jeanne Robertson</b>                                                                   | Date<br><b>7/15/08</b><br>Check if revision <input type="checkbox"/> | CE's review<br><input type="checkbox"/> OK <input type="checkbox"/> Correx                    |
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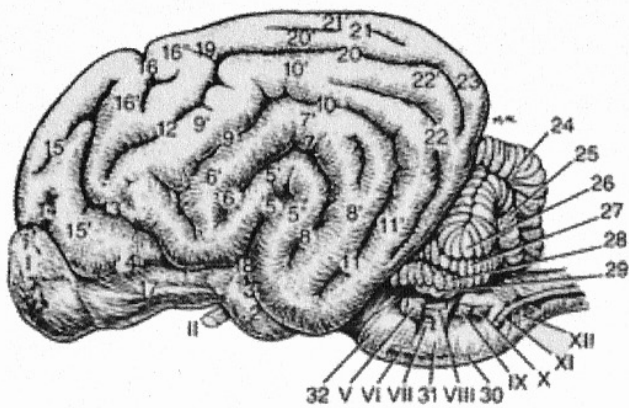


*should be same color as peritoneal cavity. I would delete the dots and lines in it.*

*Red path.*

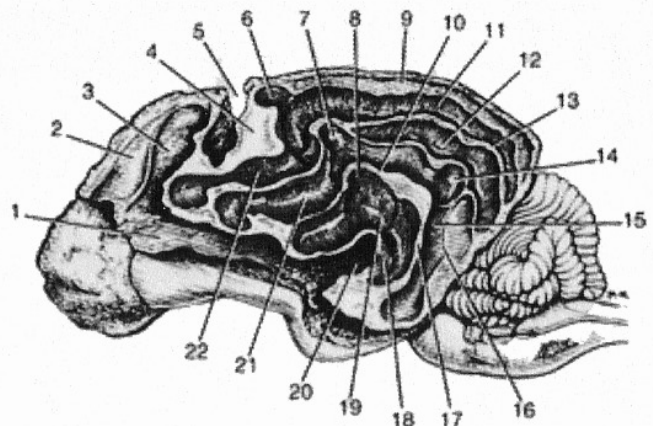






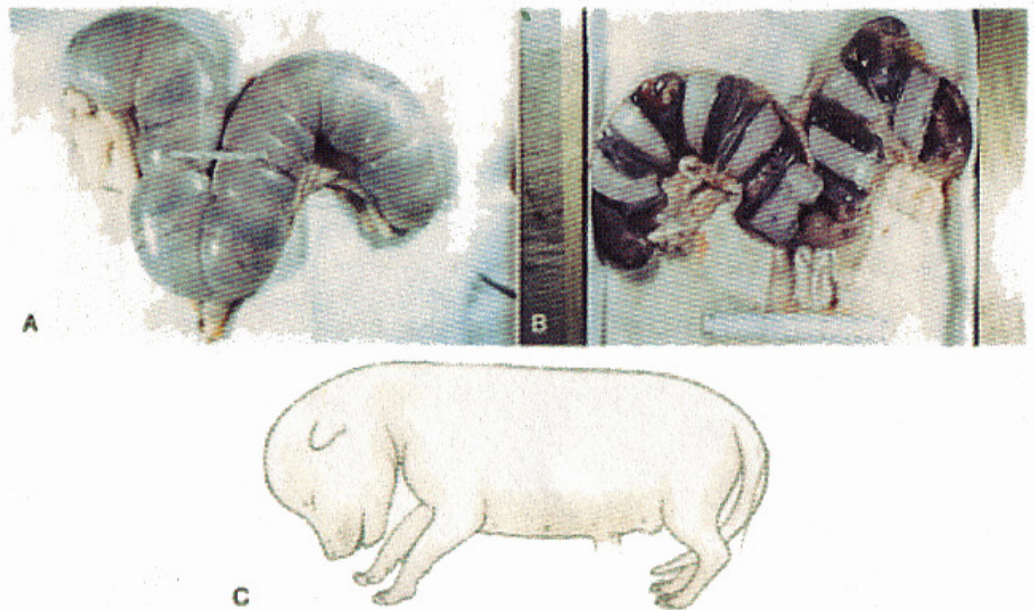
**FIGURE 18-31** Lateral view of the brain. The ventral part of the cerebral hemisphere is associated with olfactory axonal input and is designated rhinencephalon.

- |                                          |                               |
|------------------------------------------|-------------------------------|
| 1. Olfactory bulb                        | 17. Olfactory peduncle        |
| 2. Piriform lobe                         | 18. Insular region            |
| 3. Caudal part of lateral rhinal sulcus  | 19. Ansate sulcus             |
| 4. Rostral part of lateral rhinal sulcus | 20. Marginal sulcus           |
| 5. Pseudosylvian fissure                 | 20'. Marginal gyrus           |
| 5'. Rostral sylvian gyrus                | 21. Endomarginal sulcus       |
| 5'. Caudal sylvian gyrus                 | 21'. Endomarginal gyrus       |
| 6. Rostral ectosylvian sulcus            | 22. Ectomarginal sulcus       |
| 6'. Rostral ectosylvian gyrus            | 22'. Ectomarginal gyrus       |
| 7. Middle ectosylvian sulcus             | 23. Occipital gyrus           |
| 7'. Middle ectosylvian gyrus             | 24. Vermis of cerebellum      |
| 8. Caudal ectosylvian sulcus             | 25. Paramedian lobule         |
| 8'. Caudal ectosylvian gyrus             | 26. Ansiform lobule           |
| 9. Rostral suprasylvian sulcus           | 27. Dorsal paraflocculus      |
| 9'. Rostral suprasylvian gyrus           | 28. Ventral paraflocculus     |
| 10. Middle suprasylvian sulcus           | 29. Flocculus                 |
| 10'. Middle suprasylvian gyrus           | 30. Pyramid                   |
| 11. Caudal suprasylvian sulcus           | 31. Trapezoid body            |
| 11'. Caudal suprasylvian gyrus           | 32. Pons                      |
| 12. Coronal sulcus                       | II. Optic nerve               |
| 13. Presylvian sulcus                    | V. Trigeminal nerve           |
| 14. Preorean sulcus                      | VI. Abducent nerve            |
| 15. Preorean gyrus                       | VII. Facial nerve             |
| 16. Cruciate sulcus                      | VIII. Vestibulocochlear nerve |
| 16'. Precruciate gyrus                   | IX. Glossopharyngeal nerve    |
| 16'. Postcruciate gyrus                  | X. Vagus nerve                |
|                                          | XI. Accessory nerve           |
|                                          | XII. Hypoglossal nerve        |

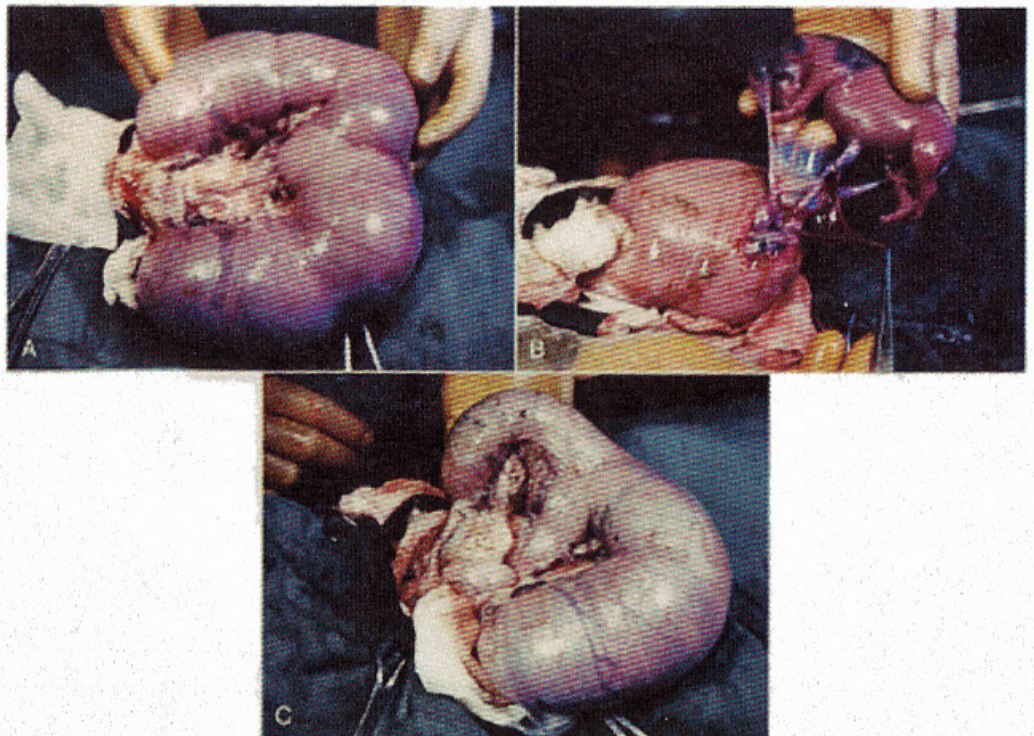


**FIGURE 18-32** Lateral view of a canine brain with cortex removed from the left cerebral hemisphere to show underlying white matter. Locations of sulci are labeled.

- |                                                      |                                                      |
|------------------------------------------------------|------------------------------------------------------|
| 1. Preorean gyrus                                    | 12. Ectomarginal sulcus                              |
| 2. Preorean sulcus                                   | 13. Ectomarginal gyrus                               |
| 3. Presylvian sulcus                                 | 14. Caudodorsal branch of middle suprasylvian sulcus |
| 4. Postcruciate sulcus                               | 15. Caudal suprasylvian sulcus                       |
| 5. Cruciate sulcus                                   | 16. Caudal suprasylvian gyrus                        |
| 6. Ansate sulcus                                     | 17. Caudal ectosylvian gyrus                         |
| 7. Rostrodorsal branch of middle suprasylvian sulcus | 18. Caudal sylvian gyrus                             |
| 8. Dorsal branch of middle ectosylvian sulcus        | 19. Middle ectosylvian sulcus                        |
| 9. Endomarginal sulcus                               | 20. Pseudosylvian fissure                            |
| 10. Middle ectosylvian gyrus                         | 21. Rostral suprasylvian sulcus                      |
| 11. Marginal sulcus                                  | 22. Coronal sulcus                                   |

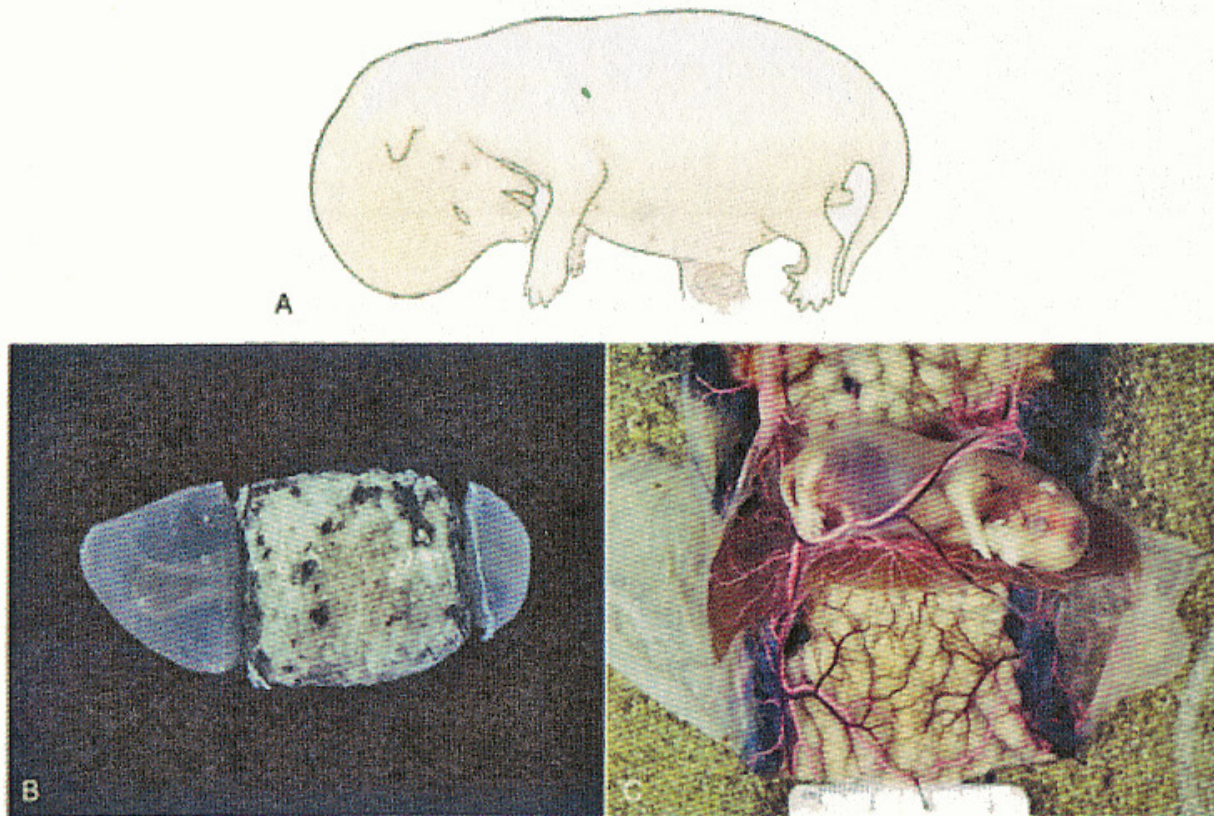


**FIGURE 2-79** Developmental status on the 50th day of gestation. **A**, Exterior of the uterus. **B**, Placental bands, myometrium removed. **C**, External features of the fetus.

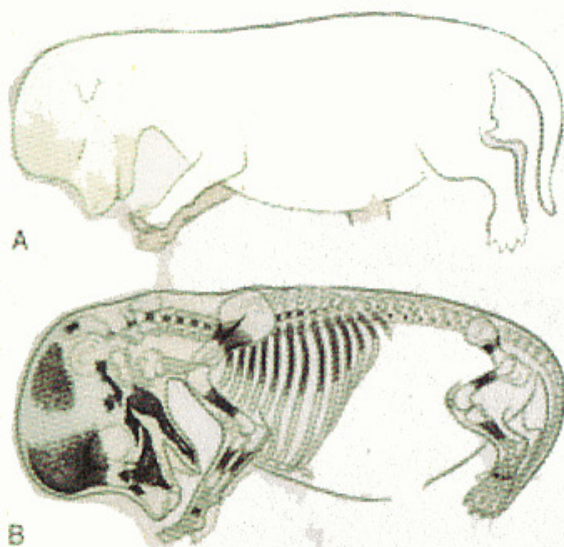


**FIGURE 2-80** **A**, Exteriorized uterus of a Beagle at 50 days of gestation. **B**, Removal of fetuses from the left horn. **C**, Exteriorized uterus at 55 days prior to the removal of fetuses from the other uterine horn. Note the shrinkage of the left horn of the uterus after a 5-day interval.

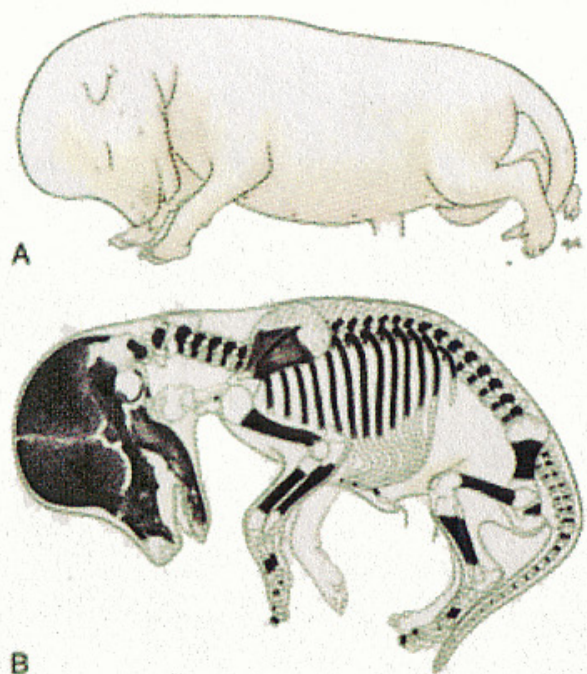




**FIGURE 2-76** Developmental status on the 35th day of gestation. **A**, External features. Note the normal occurrence of umbilical hernia of the intestine shown in pink. **B**, Fetus within its membranes and placenta. Note the faint outline of the yolk sac. **C**, A mongrel fetus and placenta of about 35 days of gestation. The placenta has been opened, and the vessels injected with latex. (Note vascularization of yolk sac.)

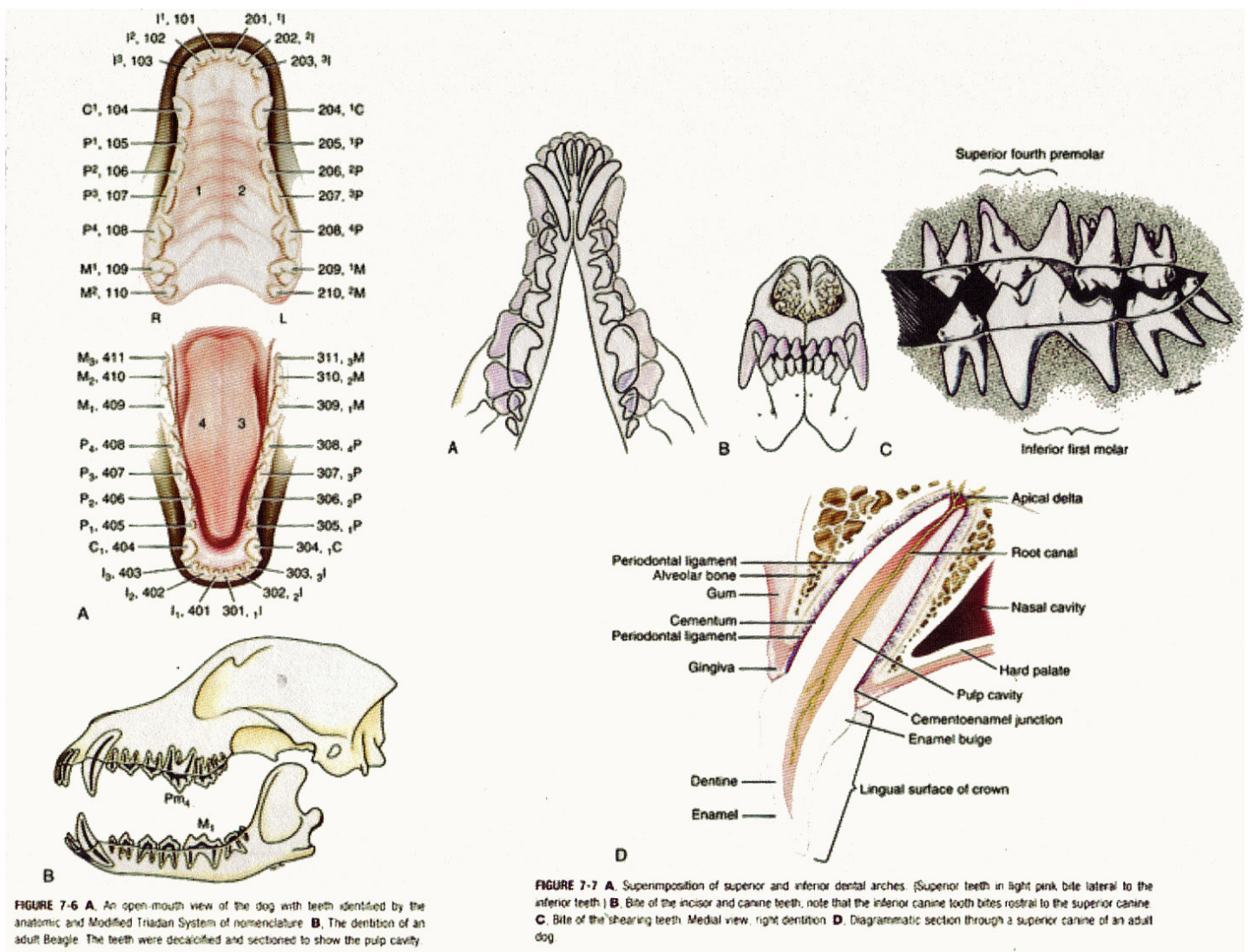


**FIGURE 2-77** Developmental status on the 40th day of gestation. **A**, External features. **B**, The skeleton.



**FIGURE 2-78** Developmental status on the 45th day of gestation. **A**, External features. **B**, The skeleton.





# **NOMINA ANATOMICA VETERINARIA**

**FOURTH EDITION**

Prepared by the International Committee on Veterinary Gross Anatomical Nomenclature and authorized by the Eighteenth General Assembly of the World Association of Veterinary Anatomists, Gent, 1992

together with

## **NOMINA HISTOLOGICA**

**REVISED SECOND EDITION**

Revised by the International Committee on Veterinary Histological Nomenclature and authorized by the Eighteenth General Assembly of the World Association of Veterinary Anatomists, Gent, 1992

and

## **NOMINA EMBRYOLOGICA VETERINARIA**

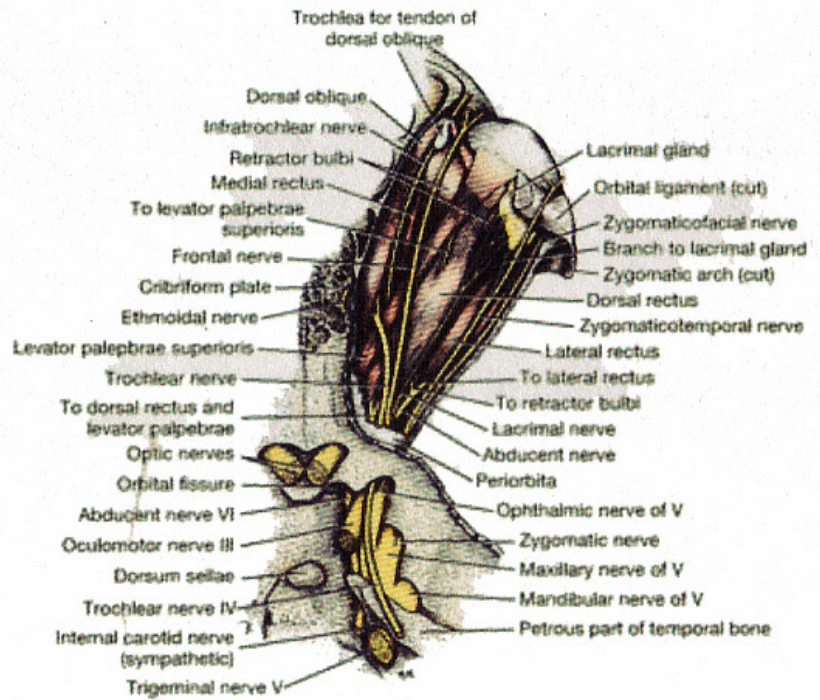
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1994

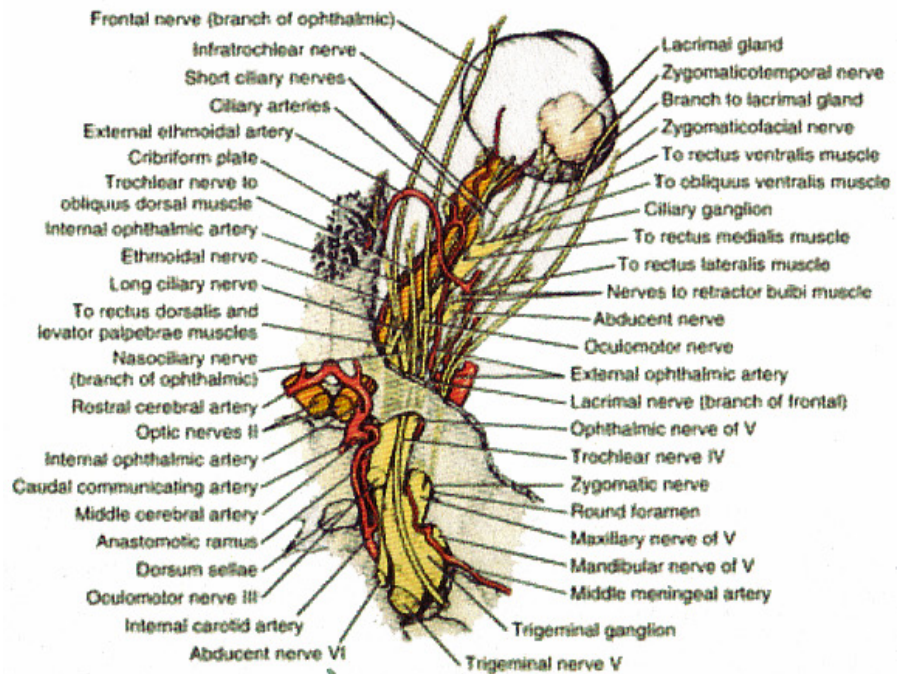
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Veterinary Histological Nomenclature,  
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World Association of Veterinary Anatomists

Zürich and Ithaca, New York





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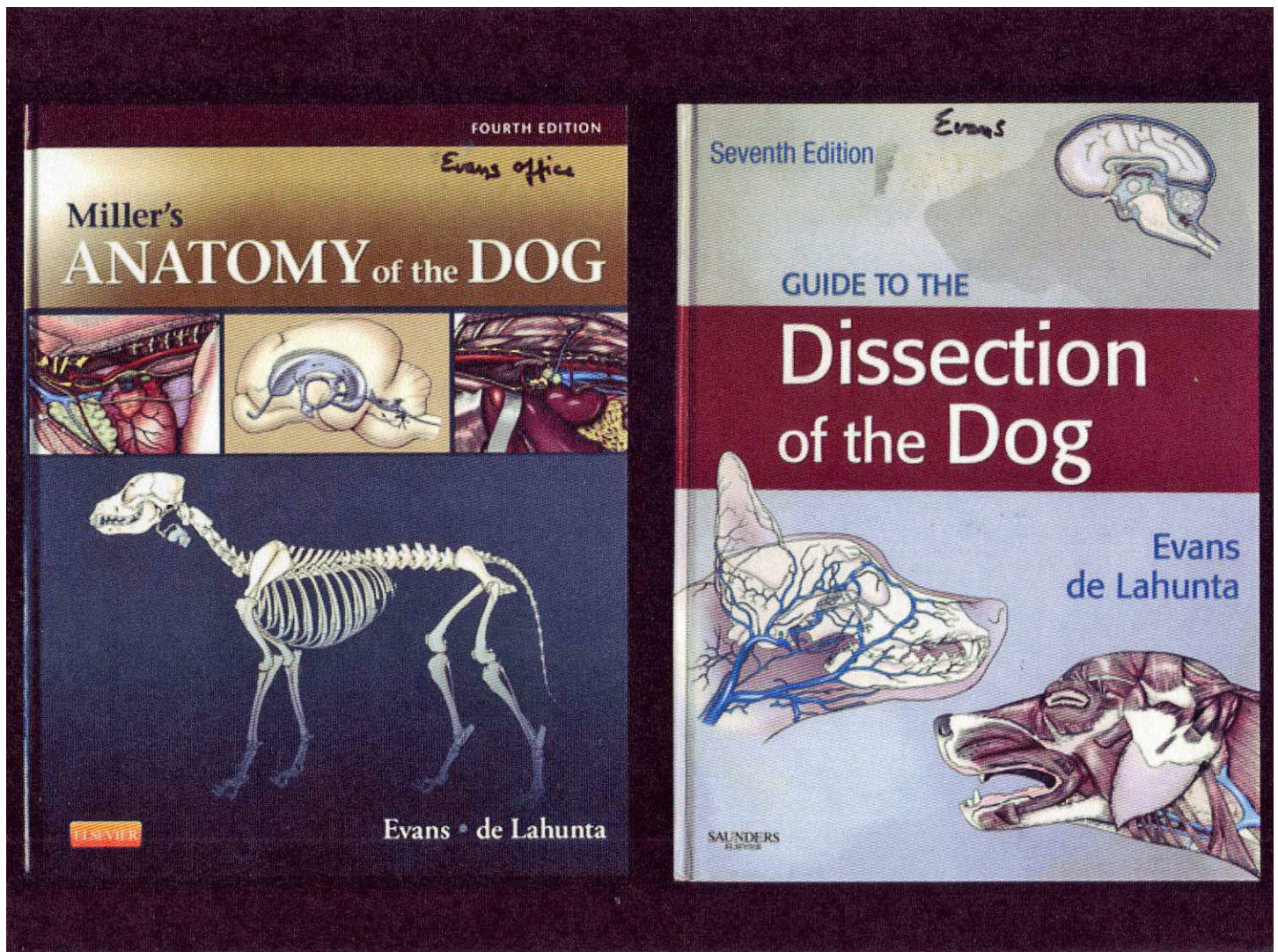


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Fourth edition of *Miller's Anatomy of the Dog* and seventh edition of *Guide to the Dissection of the Dog*.



*I dedicate this fourth edition to my former student and colleague, now co-author, "Sandy" de Lahunta, without whom I would not have undertaken this revision.*

*H.E.*



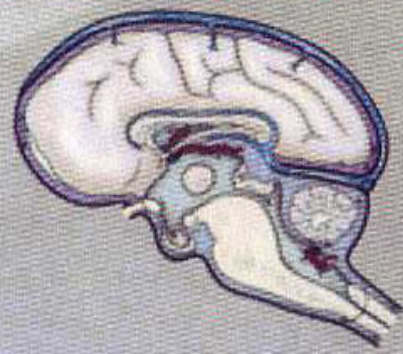
Cornell Graduation, 2005

Friends and co-authors (de Lahunta, left; Evans, right) participate in the Commencement Exercises (2005)



Seventh Edition

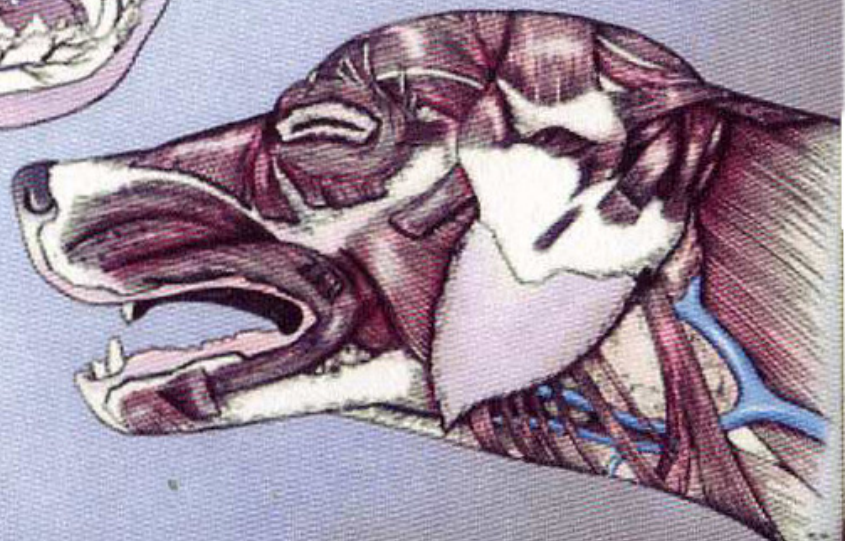
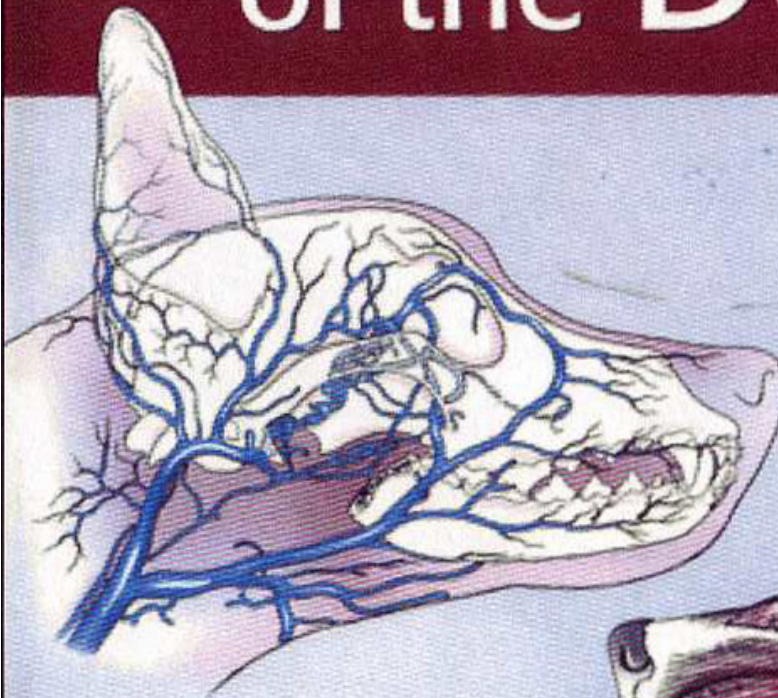
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GUIDE TO THE

# Dissection of the Dog

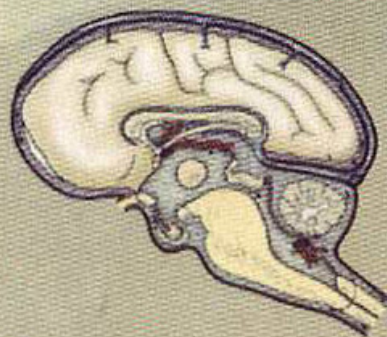
Evans  
de Lahunta



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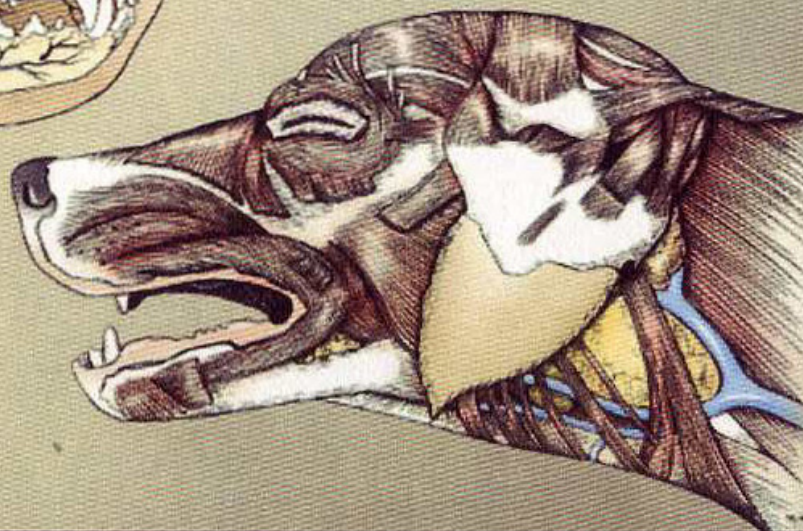
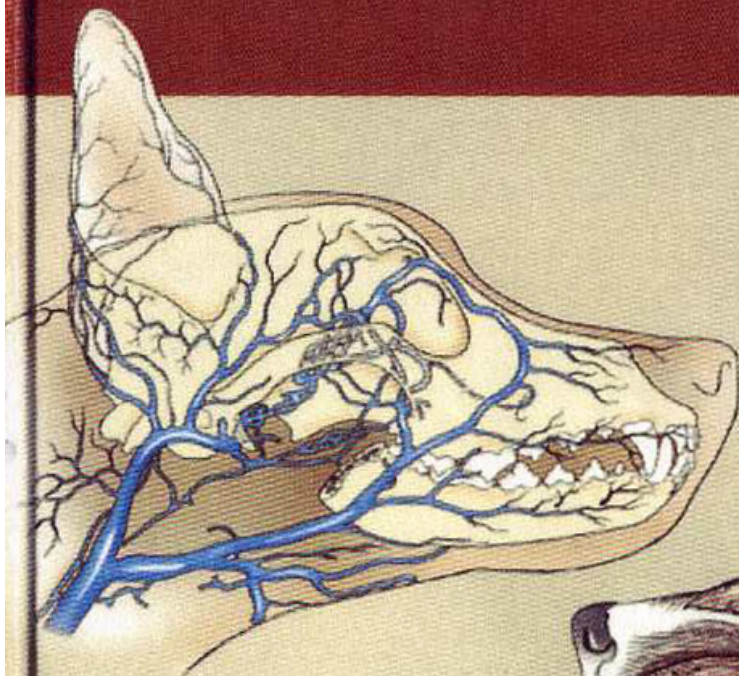


GUIDE TO THE  
DISSECTION OF THE DOG

# 개 해부 길잡이

저자 Howard E. Evans, Alexander de Lahunta

역자 한국수의해부학교수협의회



Korean edition of *Guide to the Dissection of the Dog*



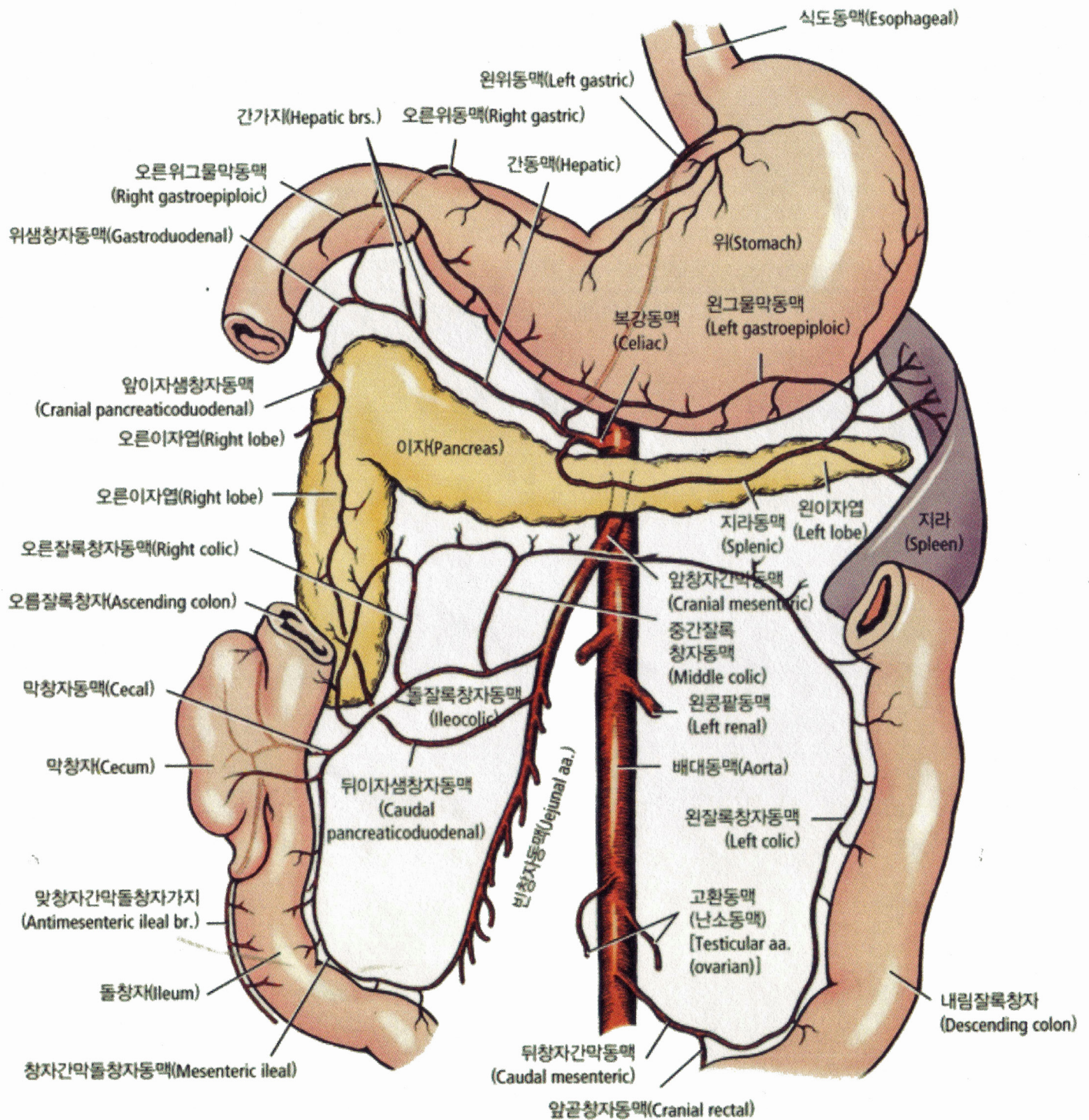


그림 4-29 주요 연결을 함께 나타낸 복강동맥 가지와 앞창자간막동맥 가지.

From the Korean edition of *Guide to the Dissection of the Dog*.