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COVER PHOTO — See pg. 4
Dr. John H. Helwig, O.V.M.A. President

THE SPECULUM is a quarterly publication of The Ohio State University College of Veterinary Medicine. It is published by the students for the dissemination of news to the alumni, faculty, students, and other interested persons. Contributions are welcomed but we reserve the right to edit the material.
Parvex-Plus is specifically designed for the effective elimination of damaging internal parasites of equines. The synergistic, complementary and additive effects of two widely accepted anthelmintics in this product, Parvex (piperazine-carbon disulfide complex) and phenothiazine, have clearly established it as highly efficacious in the elimination of: Ascarids, Bots, Large Strongyles, Small Strongyles and Pinworms.

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Some of you have no doubt wondered why I didn't mention the fact that I was to be a candidate for the office of President-Elect of the A.V.M.A., in "Across the Dean's Desk" column in the Fall issue of The Speculum. The truth of the matter is, at the time of preparing the article nothing was further from my mind and it was quite some time later that I acceded to the wishes of Ohio Veterinary Medical Association to allow my name to be placed in nomination.

I feel that I owe a long standing debt to the loyal Ohio State alumni and particularly to the veterinarians in Ohio who have been most helpful in supporting our college program over the years. I would certainly be remiss not to accept the challenge when it is the feeling of our association that I can fill this most highly honored position with dignity and provide the leadership in keeping with the responsibilities of the office.

Having been closely associated with the inner workings of the A.V.M.A. over a period of about 15 years as a member of the House of Delegates, Executive Board and Board of Governors, I am fully aware of the responsibilities of the position to which I am accepting the nomination and I want to assure you that it is not the honor which I am seeking.

Someone asked me if I had a platform and if there were any campaign promises I intended to make. My reply is simply this . . . "My record over the years should speak for itself. As a member of the veterinary profession and during my years of service to the governing bodies of the A.V.M.A., I have always worked for the best interest of the profession, have placed integrity above political expediency, have never feared to speak out against things which were not in keeping with the best image expected of our profession and everyone can rest assured I have no intention to change." This is my only campaign promise and I can give everyone my full assurance I will live up to it.

I appreciate all of your fine notes and good wishes. As stated in my personal letter to each of you, if I am to be successful it will take the combined effort of everyone toward getting the delegate from your respective states committed to me. Any suggestions you might have will be appreciated by our local committee.

Speaking of the loyalty of our alumni, I am always amazed at the rapid response we get to our S.O.S. for support of The Speculum. In the ten days since our letter was mailed, more than 150 checks have been received. I wish I could convey to each of you what this response has meant to the editor and staff of The Speculum, who work so diligently in getting out each issue. Several have said that they never realized that The Speculum means so much to our alumni. While time will not permit acknowledgment of your notes and checks, rest assured they are appreciated and will be properly credited to your account. On behalf of myself and all of The Speculum staff, our sincere thanks.
Plans for the new building are progressing rapidly. Drs. Tharp and Rudy have really been burning the midnight oil in preparing our request for federal research, matching funds. We are hoping that our efforts are successful. In the meantime I can report that the hospital operation in the New Temporary Facility is working out very well and is proving very functional. I can assure you that our teaching program will not suffer while waiting for the new hospital to be built. It might be of interest to you to know that the completion deadline for the new hospital is March, 1968, with the beginning of construction to start in October of this year. When this project is completed I feel we should have a real dedication celebration and hope all of you start planning now to be present for the occasion. It is still too early to plan such an occasion, but with a little luck, I’m sure things will progress on schedule.

Sincerely,

Walter R. Krill
Dean

DR. HELWIG
NEW OVMA PRESIDENT

Dr. John H. Helwig was installed as president of the Ohio Veterinary Medical Association at the 82nd annual state meeting held in Columbus. As Chairman of the Department of Veterinary Preventive Medicine and director of Continuing Education for the College of Veterinary Medicine, Dr. Helwig is well acquainted with the role of the veterinarian in today’s society.

A native of Toledo, Dr. Helwig received the D.V.M. degree from Ohio State in 1937 and the Master of Science degree in 1939. He actively participated in teaching food hygiene, environmental sanitation and infectious diseases through the preventive medicine department.

Dr. Helwig’s qualifications for presidency were outlined by his active membership in the following organizations: U.S. Livestock Sanitary Board, Research Workers of Animal Disease, Board of Governors for the American Board of Veterinary Public Health, and the American Veterinary Medical Association’s Specialty Board.

O.S.U. STUDENT GETS WEST VIRGINIA SCHOLARSHIP

John A. Mallow, left, a freshman veterinary student at OSU received a $300.00 check from Dr. Nicholas Endrizzi, President of the West Virginia Veterinary Medical Association, as Dr. Vernon Tharp, director of veterinary clinics looks on. Mr. Mallow, from Franklin, W. Va., was awarded the money to assist him in completing his veterinary medical education. The money is non-returnable provided Mr. Mallow upon completion of his education returns to West Virginia to practice veterinary medicine.

THE SPECULUM
An increasingly important field of study, one that has been sorely neglected even though it dates back to the horse and buggy, has been undertaken at the O.S.U. College of Veterinary Medicine. Equine nutrition is the subject and Dr. Philip Linerode of the Dept. of Veterinary Preventive Medicine is the investigator. Dr. Linerode’s research is being conducted in cooperation with the Dept. of Animal Science and Dr. William Tzyznik, Professor of Veterinary Preventive Medicine and Animal Science, is supervising the investigation. Dr. Linerode maintains that the available information which guides one today in the feeding of horses is far outdated; current feeding practices, he points out, frequently have no objective bases, and there is little proven nutritional information today upon which a feeding program can be based. Many people feel that veterinarians lack leadership in the horse industry because little attention is given to preventive medicine, little time is spent in equine research, and LITTLE IS KNOWN ABOUT NUTRITION! Studies on the nutrition of small animals, ruminants and poultry have far surpassed equine nutrition investigations. Here is an important area in which veterinarians should attempt to increase their knowledge in order to raise their professional standing in the equine industry. Good animal nutrition is just as important as good medical treatment; both are veterinary services.

Dr. Linerode’s research project involves basic studies in equine digestion and metabolism; his preliminary work in vivo and in vitro, has been the investigation of the processes occurring in the caecum of the horse. These studies (Continued on page 10)
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**Physiology and Pharmacology**

Dr. C. R. Smith participated in the Michigan State University Annual Conference for Veterinarians on January 19-20. He gave a report on "Fluid Therapy."

Dr. Smith participated in the program of American College of Veterinary Surgeons which was held February 4. The topic of the program was "Experimental Hemorrhagic Shock."

He also attended a discussion of "The Research Program of the Central Ohio Heart Association, January 24, at the Shelby, Ohio, Rotary Club.

Drs. Richard Redding and Thomas Powers participated in the joint meetings between Animal Health and Public Health practitioners. Dr. Redding reported on "Newer Inhalation Anesthetics and Their Use in Veterinary Medicine" and "Electroencephalography as a Diagnostic Tool." Dr. Powers reported on "Kidney Function in Maintaining Acid Base Balance" and "Present Status of Antimicrobial Therapy In Veterinary Medicine."

Dr. Redding is Consultant for the United States Navy in relation to the Sea Lab II Project, "Determination of the Effects of Various Gaseous Mixtures on the Electroencephalogram Under Hyperbasic Conditions."

Dr. Powers presented a paper to the Cincinnati Academy of Veterinary Medicine on "Renal Function in Chronic Interstitial Nephritis."

**Bacteriology**

Dr. Garry Pearson completed his Masters degree in Bacteriology.

Dr. W. M. Tayler, Jr. (OSU '61) has joined the department and will undertake graduate study.

Dr. Doyle Roebuck, who obtained a Ph.D. at The Ohio State University some time ago, has assumed responsibility for the microbiology diagnostic clinic. He is a permanent staff member and an assistant professor.

Drs. Ball and Kreier presented a paper in New Orleans on November 3-5, 1965, at the 14th Annual meeting of the American Society of Tropical Medicine and Hygiene. The paper was entitled "Erythrocyte Survival and Some Aspects of Iron Metabolism in Chickens Infected With Plasmodium gallinaceae."

**Parasitology**

Dr. Fleetwood Koutz participated in the 82nd Annual Convention of the Indiana Veterinary Medical Association, January 9-12, 1966, at Indianapolis. He gave a talk on "Parasitic Problems" in the Small Animal Section and was also on the panel discussion of Parasitology in Small Animals. Dr. Koutz also discussed "Newer Anthelmintics" at the 82nd Annual Meeting of the O.V.M.A. on February 6, 1966.

Dr. Koutz was re-elected Secretary of the City of Grandview Heights Board of Health. He has been Secretary for the past ten years.

Dr. Harold F. Groves presented a paper "Parasites of Swine," at the Swine and Poultry Health Conference on December 15, 1965, held at Sisson Hall.

**Surgery**

Dr. William Roenigk has been appointed Radiology Consultant for the Walter Reed Army Institute of Research in Washington, D. C. On February 21 and 22, he attended the Illinois Veterinary Medical Association meeting where he discussed "Bone and Joint Diseases of Cats" and "Radiography of the Thorax and Abdomen of the Cat."

He also participated as a member of a panel at the meeting.

Dr. Paul Pennock presented "Radiotherapy Tips" at the O.V.M.A. meeting.
Dr. and Mrs. George Wilson chaperoned the Junior Class when they journeyed to Detroit, Michigan, to tour the Parke-Davis facilities on March 23-25.

One of the participants in the Western States Veterinary Conference meeting from January 16-21 was Dr. LeRoy Johnson. The meeting was held in Las Vegas and, therefore, entertainment was added to education. He also attended the Equine Practitioners' meeting in Florida; Dr. Johnson is a member of the Racing Committee. Dr. Johnson attended the first annual meeting of the American College of Veterinary Surgeons on February 4. Dr. Zollinger and other esteemed members of the American College of Surgeons were present. The program dealt with "Shock".

Dr. Albert Gabel also attended the meeting of the American College of Veterinary Surgeons in Chicago. At the O.V.M.A. meeting, Dr. Gabel was moderator for a Lameness panel. At the West Virginia State Veterinary Medical Association meeting, February 16 and 17, he presented "Abomasal Disorders" and "Trauma in Horses." He has also spoken to three 4-H groups on various aspects of veterinary medicine.

Dr. Richard Rudy was named a member of the Board of Regents of the American College of Veterinary Surgeons at the February meeting in Chicago. In addition, he conducted an Orthopedic Workshop in March at O.S.U.

Dr. and Mrs. David Lippert became parents of a boy, Michael David, on January 7.

# Veterinary Medicine

Dr. James Donham attended the West Virginia State Veterinary Medical Association Meeting where he spoke about "Bovine Practice" and "Equine Practice."

The Pre-Veterinary Medical Association is continuing to grow under the guidance of its adviser, Dr. W. Keith Wearly. Dr. Wearly was one of the contingent of men from Ohio State who journeyed to Florida on December 6-8, 1965, to attend the Equine Practitioners' meeting.

Besides attending the Equine Practitioners' meeting in December, Dr. Richard Rainier has been attending Aviation Ground School with Dr. Albert Gabel. They both plan to start flying next quarter. In addition, Dr. Rainier spoke to the farmers of Perry County on "Herd Health - Cow and Calf Operation." He also participated in the Swine School for Washington Court House, Cedarville, Springfield, and Mount Sterling. The school was scheduled two nights a week for three weeks in February.

Dr. Edward Donovan discussed "Ocular Fundus Diseases of the Dog and Cat" on January 15 at the St. Louis Academy of Veterinary Medicine meeting in St. Louis, Missouri. At the Louisiana Conference for Veterinarians at the Louisiana State University in Baton Rouge on January 25 and 26, Dr. Donovan presented the "Ocular Fundus Anomaly in the Collie" and discussed the "Use and Interpretation of Blood Chemistry Examinations in Small Animals." On February 6, Dr. Donovan was on the program of the O.V.M.A. annual meeting. He also took an active part in the Symposium on Canine Distemper Immunization in New York City on February 23 and 24. The Symposium was sponsored by the American Kennel Club and the A.V.M.A. At the Dayton Academy of Veterinary Medicine on March 1, he presented "Corticosteroids in Small Animals."

Drs. Donovan, Martin, and Wyman presented a short course on "Internal Medicine" at Ohio State on March 16 and 17.

Dr. Milton Wyman and Dr. Donovan published a paper in the *Journal of the A.V.M.A.*, 147, pg. 17, on "The Ocular Fundus of the Normal Dog." They also published a paper entitled "Ocular Fundus Anomaly in the Collie" on pg. 1465 of the same volume.

Dr. Wyman discussed "Collie Eye Anomaly" at the Minnesota Veterinary Medical Association meeting in St. Paul on January 23-25. At the O.V.M.A. meeting he discussed the "Use of the Direct Ophthalmoscope." He also spoke to the wives of veterinary students on "Diseases Transmissible from Animal to Man." At the Trumbull County Veterinary Association meeting on March 22, he spoke on "Diseases of the Cornea."

THE SPECULUM
Dr. Robert Whiteus discussed "Hospital Management" at the West Central Ohio Veterinary Medical Association meeting in January at Lima; he also spoke to the Minnesota Veterinary Medical Association in Minneapolis January 24-26.

Dr. Vernon Tharp, at the West Virginia Veterinary Medical Association meeting, discussed "Embryotomy in the Mare." He has also planned the new 16 stall horse ward which was constructed for the horses used in the Equine Research Project. The stalls are each 10 feet wide by 12 feet long.

Dr. and Mrs. James Ross announce the birth of a baby girl on February 4. Her name is Stephanie Jo.

- **Preventive Medicine**

Dr. Roger Yeary presented a paper entitled "Public Health Aspects of Chemical Residues" at the 82nd annual meeting of the O.V.M.A. He discussed the "Safe Use of Pesticides" at a joint meeting of the Kilbuck Valley Veterinary Medical Association and local feed dealers at Wooster, Ohio.

Dr. Philip Linerode represented the department at the December meeting of the American Association of Equine Practitioners in Miami, Florida.

Dr. D. O. Jones spoke on "Potential of Milk as a Public Health Hazard" before the Dairy Industry Conference on February 8.

Dr. Jones and Dr. Rex Buller are participating in the Ohio Mastitis Council program in cooperation with dairy science extension departments. In February they spoke to interested dairymen in Greenville and Medina on "Milk Secretion and Udder Health."

- **Pathology**

Assistant Professor Charles C. Capen successfully completed the national board in Veterinary Pathology and was elected a diplomate of the American College of Veterinary Pathologists. Dr. Capen has also been nominated for membership in the International Academy of Pathology in recognition of his outstanding contributions and achievements in pathology.

"The Ultrastructure, Histopathology and Histochemistry of the Parathyroid Glands of Pregnant and Non-Pregnant Cows Fed a High Level of Vitamin D." by Drs. Capen, Koestner and Cole, appeared in Laboratory Investigation, the official journal of the International Academy of Pathology, 14:1809-1825, Dec. 1965.


Dr. R. A. Griesemer presented a seminar at Cornell University on December 29, on "Large Germfree Mammals in Research." Dr. Griesemer was elected to the Executive Council of the American College of Veterinary Pathologists at the annual meeting in November. "Chromosome Analysis of 2 Canine Tumor Cell Lines," by Drs. Pakes, Griesemer and Kasza appeared in the Am. J. of Vet. Res. 26:837-843, 1965.

Dr. and Mrs. Edward Fowler announce the arrival of their daughter, Debra Ann just shortly before Thanksgiving.

Dr. Fowler received the Ph.D. degree in Veterinary Pathology in December. His dissertation was entitled "Enzyme Histochemical Studies of Canine Neoplasms In Vivo and In Vitro."

Dr. Fowler has accepted an appointment as Assistant Professor to replace Dr. George Wolf who resigned to accept a position in research at The Eastman Kodak Company. Dr. Fowler served as Chairman of a Committee to elevate the interest in Phi Zeta and has been appointed to serve on the Program Committee for 1966-67 to find speakers and seminar participants for the quarterly Phi Zeta meetings.

Professor Fowler has been appointed to a committee made up of members of the 5th District and the Columbus Academy of Veterinary Medicine to establish a display concerning veterinary medicine in the Center of Science and Industry on East Broad Street in downtown Columbus. Veterinary medicine is the only medical profession that does not now have a display in the Center. Dr. Edwin Holzinger received his Master of Science degree in Veterinary
Pathology in December. The title of his thesis is "Reovirus, Type I, Infections in Germfree and Disease-free Dogs." He spoke before the pathology seminar at the College of Medicine on January 19, 1966, on the results of his research of infection with Reovirus.

Dr. Holzinger has accepted a position as Research Associate, Department of Pathology, Cornell University. Dr. and Mrs. Holzinger announce the birth of a daughter on January 8.

A chapter entitled "An Introduction to Comparative Neuropathology," has been submitted by Dr. A. Koestner for publication in the book, Methods and Achievements in Experimental Pathology, published by S. Karger, Editors — Jasmin & Byers 1966.

Dr. John E. Holman received his Ph.D. in Veterinary Pathology in December and accepted a position as research pathologist of the Comparative Cardiovascular Pathology unit at the Armed Forces Institute of Pathology, Washington, D.C. He holds the rank of Commander, U. S. Public Health Service. The title of Dr. Holman's Ph.D. dissertation is "The Pathogenesis of Porcine Polioencephalomyelitis in Germfree Pigs."

Dr. Lauren G. Wolfe received his M.S. degree in Veterinary Pathology in December. His thesis is entitled "Feline Infectious Peritonitis." Dr. Wolfe presented a talk on a new disease entity in cats at the pathology seminar in the College of Medicine on January 19, 1966.

The following papers were presented by the faculty and postdoctoral fellows at the Conference of Research Workers in Animal Diseases, Chicago, Illinois:

"Electronmicroscopy of Tissue Cultures Infected with a Porcine Polioencephalomyelitis Virus" by Drs. Koestner, Kasza and Owen Kindig.

"The Infectivity of Three Porcine Polioencephalomyelitis Viruses for Germfree and Pathogen-free Pigs" by Drs. Long, Koestner and Kasza.

"Demonstration of the Effects of a Swine Adenovirus on an Established Swine Kidney Cell Line by Immunofluorescence" by Drs. Shadduck and Kasza.

Dr. Walter F. Loeb, at the Illinois State Veterinary Medical Association meeting, February 21 and 22, presented "Feline Hematology" and "Application of Laboratory Tests in Feline Practice."

At the International Academy of Pathology in Cleveland, March 6 to 9, he discussed "Leucyl Aminopeptidase Activity in Canine Neoplasia."

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**Anatomy**

Dr. Aaron Horowitz has been appointed to the Nomenclature Committee of the American Association of Veterinary Anatomists. His primary responsibility will be the vascular system.

(Cont. from page 5)

will lay the groundwork for determining the nutritive requirements of the horse.

In June, 1965, Dr. Linerode, using normal surgical techniques, fistulated the caeca of six ponies; he was assisted by Drs. Richard Redding and Bruce Heath of the O.S.U. Veterinary College. The surgical technique was developed in the spring of 1965 in "germ-free" conditions by Dr. Donald Redman of the Ohio Agricultural Research and Development Center, Wooster, Ohio, and Dr. Linerode. The success of Dr. Linerode’s operations suggests that all types of abdominal surgery are possible in the horse without terminating fatally due to peritonitis and other complications. Ponies, used due to lack of sufficient funds, were obtained through the Ohio Quarterhorse Association.

Caecal fermentation studies are now under way and are revealing information on cellulose digestion, micro-organisms normally found in the equine caecum, and the nature and amount of B-vitamin synthesis by the microflora. These investigations are adapted from methods now utilized in the study of ruminant microflora.

Dr. Linerode’s work is just a beginning in the field of veterinary medicine that needs much more study and information. It will be some time before the dietary requirements of the horse are established and well-balanced nutritional feeding programs are developed. Indeed, there is much cultivating and harvesting of knowledge to be done in the field of equine nutrition.
Fun Night '66

DON SANDERS, VET. MED. II

The biennial visit of the dramatic arts came to Sisson Hall this year on February 11. Faculty, students and guests enjoyed a riotous evening of satire, wit and humor of life in the veterinary college as seen through the students' eyes. Many of the students gave up their studies temporarily in preparation for skits characterizing professors and fellow students. Dick Böhning and Tom Burke did an excellent job as emcees. The show's theme was an evening of television programs and was graced by the presence of Miss OSU, Marcia McCalla, doing several ballads with Bill Mewborn and Dick Cardy on guitars.

Miss OSU, Marcia McCalla and Dick Cardy.

The students used much imagination and talent to come up with their amusing skits. The freshmen organized a panel portraying Drs. Venzke, Andres and Diesem; they also presented a short skit of these profs in the operating room with Dr. Hrowitz performing the surgery. The girls in the college put on a skit of Sunday Conference at the clinic with a little insight as to the animal point of view. The sophomore class had a skit called "Combat" a hard-fought boxing match between Sisson Hall's Department of Parasitology and Cole's Castle. The fight was rigged! Entertainment was also provided by Bill Mewborn and dentistry student, Evan Ewing, strumming banjos.

The junior class put on "Sing Along With Bruce" with audience participation. This proved hilarious with their improvisations. One of the best remembered individual skits was senior John Stover's portrayal of Dr. G. P. Wilson; the "Jolly Green Giant" demonstrated end-to-end intestinal anastomosis via paper bag techniques.

All in all, it proved to be a delightful three-hour rendition of life in the veterinary college, dedicated to the contractors of our "green garage" who failed to include the *Rhipicephalus* from the old clinic.

During the past 2 years, Ohio has been carrying out steps in Phase I and Phase II of the National Hog Cholera Education Program. The national goal for all states to be in Phase III is 1967. This is the first phase in which federal indemnities can be paid for hogs destroyed because of cholera. The goal for the U.S. to be officially declared cholera free is 1972.

Regulation #220, effective Jan. 1, 1966, requires that a permit from the Ohio Dept. of Agr. be obtained to sell or use any live hog cholera vaccine. Further, such sale or use must be reported within 5 days.

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Pre-Veterinary Medicine Day – 1966
BY MIKE YOUSHAK, VET. MED. III

On April 16, the seventh annual Pre-Veterinary Medicine Day will be presented by the student body of the College of Veterinary Medicine. Last year a record number of over 550 interested people crowded Sisson Hall to examine the opportunities in our profession. Because of this increasing interest, it was necessary to revamp the schedule used in past years. This year the Pre-Vet Day program will be composed of two component programs, one at Sisson Hall and one at the new temporary clinic. The people attending will be divided into two groups. Group A will attend the Sisson Hall program in the morning and the clinic program in the afternoon; conversely Group B will tour the clinic in the morning and Sisson Hall in the afternoon. This schedule permits us to give more individual attention to each visitor.

Some of the highlights of the day will be the following: At Sisson Hall there will be a faculty member discussion of the opportunities in veterinary medicine and guided tours of exhibits stressing all phases of the educational program in the college. At the clinic there will be a tour of the temporary facilities, exhibits dealing with the clinical aspects of veterinary medicine, and a presentation of clinical patients. Lunches will be served at both Sisson Hall and the clinic.

The program is designed to stimulate interest in our profession, to reveal the varied careers available to young people, and to attract high quality students as applicants for admission into the college. Therefore, it is our firm hope that each veterinarian reading this article will take time out from his busy schedule to help us promote our profession by informing all interested individuals about the Pre-Vet Day program. If possible, your personal contact concerning the program with local science clubs, 4-H groups, high school organizations, and other associations would be an excellent addition to our publicity. We cordially invite anyone reading this article to attend and examine our college facilities and their functions.

The announcement on page 13 is designed for posting in veterinary hospitals for all to read. With your help, the seventh annual Pre-Veterinary Medicine Day will be successful in promoting our profession.

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April 16, 1966

Sisson Hall
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Registration ............................. 8:00 A.M. to 8:45 A.M.

Group A    Group B
Program ......................... 9:00 to 10:30 A.M.  1:00 to 2:30 P.M.
Sisson Hall Tours ....... 10:30 to 12:00 2:30 to 4:00 P.M.
Lunch ......................... 12:00 Sisson 12:00 Clinic
Clinic Tours ............ 1:00 to 4:00 P.M.  9:00 to 12:00

We cordially invite all those interested in careers in veterinary medicine to attend this program.
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Arthropod-borne encephalitis viruses or encephalitic arboviruses are characterized by their ability to infect certain vertebrates and to multiply in the body of arthropods. This occurs through an alternating arthropod-vertebrate cycle. They produce neurotropic viral diseases in some hosts. There are at present three major encephalitides diagnosed in man in the United States: Western Equine Encephalitis (WEE), Eastern Equine Encephalitis (EEE), and St. Louis Encephalitis (SLE). More recently California Encephalitis (CE) has been diagnosed and appears to be of major importance. Of these, CE is probably the most extensive in Ohio. In 1964, twenty-one cases of CE were diagnosed in Ohio children and one case of SLE was diagnosed in an adult. These viruses are a severe public health problem in that they can cause permanent neurological damage or even death. Furthermore, being zoonotic diseases, these viruses may remain localized in the sylvatic animal population for lengthy periods of time before manifesting themselves in adjacent populations. Also the ever increasing spread of our suburbs into rural areas and increasing outdoor activities encourage human intervention into the sylvatic cycle. They are of further concern because their complete vector-host cycle is not known; thus effective control measures cannot be completely utilized. The EEE and WEE cycle is more completely defined than the CE cycle.

A number of animals including wild and domestic birds and mammals may serve as vertebrate hosts. The host range varies with the virus. Human and equine infections are accidental and dead ends in the virus cycle. The blood level of the virus is not thought to be sufficient to cause infections in the vectors. Blood sucking arthropods, such as mosquitoes, mites, and ticks may become vectors by feeding on infected vertebrates in viremia. Mosquitoes are the principal vectors in the United States. They transmit the virus to other vertebrates during subsequent feedings. One of the main problems in solving the virus cycle is the whereabouts of the virus during the winter season. The possibilities to consider are the migratory habits of birds and/or mammals, the possible maintenance of the virus in animal "carriers," and the maintenance of the virus within mosquitoes or other vectors. This overwintering in either animals or vectors is ill defined and incomplete.

Transmission depends on a number of factors which include climate, the number of infected vectors, and the vector relationship with the host population. Since the diseases occur primarily in the summer and early fall, such factors as temperature and rainfall are important. Higher than normal temperatures and an increase in rainfall both favor outbreaks of these viruses by increasing the vector population. To further enhance the virus cycle, hosts must be readily available to the vectors and present in large numbers. The correlation of all these factors can be useful in predicting outbreaks.

These encephalitides usually have an incubation period of one to three weeks in the horse. The signs appear suddenly. There is characteristically marked depression and a high fever at the onset which may return to normal by the time nervous symptoms appear. Other signs include diminished cutaneous reflexes, drooping of the lower lip, oscillation of the eyeballs, reluctance to move, and marked incoordination. In the final stages, the horse may wander aimlessly, walk in circles, and blunder into objects. When the animal goes down there is usually a peddling movement of the front legs. Death may occur within two to four days after the onset of nervous signs. Occasionally complete recovery occurs. In EEE the prognosis is very poor with about 90% mortality.
The sequella in recovered animals is usually permanent brain damage. The mortality rate for WEE is about 50%. SLE and CE have not been observed in horses.

Differential diagnoses to consider in the horse include botulism, rabies, tetanus, listeriosis, disease “X,” and moldy corn poisoning.

In man, the incubation period is between 4 and 21 days. The disease may manifest itself through three general syndromes. These include an inapparent or abortive form, a mild systemic form, and the severe form with encephalitic signs. The only evidence of the inapparent form is the formation of antibodies. In the mild form, there may be an intractable headache for one or two days, some fever, muscular aches, or localized pain. The severe form has a relatively sudden onset often with fever, sore throat, headaches, malaise, and sometimes gastro-intestinal upsets. Encephalitic symptoms, such as disorientation, irritability, and stupor usually appear during the first or second day after onset. Convulsions are a grave sign. The symptoms may last for variable periods of time. The sequellae can be paralysis, mental disability or death. CE occurs mainly in children while WEE, EEE and SLE may occur in either adults or children.

The differential diagnoses to consider in man are classified into non-infectious and infectious. The non-infectious include injuries and tumors. The infectious include post-infectious meningoencephalitis and primary meningoencephalitis. The former is divided into purulent (pneumococcal, staphlococcal, etc.) and aseptic (mumps, variola, leptospirosis, etc.). The latter is divided into purulent (nemino-coccal, staphylococcal, pneumococcal, etc.) and aseptic (lymphocytic encephalitis, poliomyelitis, coxsackie, ECHO, arthropod-borne viruses).

The successful application of control and preventive methods is difficult. Mosquito control methods should be considered. This can be accomplished by eliminating mosquito breeding grounds and by protecting man and animals from mosquitoes.

In horses an annual vaccination program for WEE and EEE can be used in enzootic areas. All horses moved through these areas should also be vaccinated. Springtime or early summer vaccination with a bivalent vaccine is recommended. Immunity is established about two weeks after the initial dose. Usually two doses seven to ten days apart are used.

Diagnosis should be based on clinical signs, geographic location and laboratory tests. The methods of diagnosis used in the laboratory are virus isolation and serological identification. The latter is more widely used.

In cases of death, brain examination can be helpful. Distribution of the lesions varies with the strain of the virus. Because of this, samples of various parts of the brain should be submitted to the laboratory. The grey matter is usually more involved. The presence of virus and lesions is diagnostic. The lesions include neuron necrosis, edema around affected neurons, and perivascular cuffing. In WEE small, acidophilic, intranuclear inclusion bodies occur in the neurons. None of these lesions are considered pathognomonic.

Supernatants from brain emulsions are injected intracerebrally into one to two day old mice for virus isolation. The mice are observed for twenty-one days for illness and death. The kill time varies with the different viruses. The brains of these mice are used for further virus identification. Newborn mice are most universally susceptible in arbovirus isolation. Other systems, if susceptible, used for tissue inoculation are adult mice (3 to 4 weeks old), half day old chicks, chicken embryos, and tissue culture.

Another method of diagnosis is whole blood virus isolation. The blood sample is taken in the early febrile phase. This is a difficult test and would not be one of the most reliable because of the transient nature of the viremia.

Another identification aid is the use of ether or sodium desoxycholate tests. Arboviruses and myxoviruses are inactivated by both of these substances. Enteroviruses adenoviruses, reoviruses, pox-viruses, psittacosis, and mouse encephalitis virus are resistant to inactivation.

The encephalitic arboviruses are grouped according to serological rela-
tionships. This is based on cross reactions in such tests as hemagglutination-inhibition (HI), complement fixation (CF), and neutralization (NT) tests. There are cross reactions within a certain group but no cross reaction with another group. There are exceptions to this. Generally HI is least specific for identification within a given group and NT is the most specific. EEE and WEE belong to group A, SLE to group B, and CE to the California complex.

The use of acute and convalescent serum samples is the preferred serological method. Depending on the blood sampling time, one, two, or three of the antibody types may be present. A four-fold rise in titer is considered diagnostic. All arboviruses may contain CF antigens and many also may contain HI antigens. Following an infection with an arbovirus, HI antibodies, if present, are generally detectable within ten days of the date of onset and persist for several months or even years. CF antibodies are generally not detectable until the second or third week after infection and do not persist long. Demonstrable NT antibodies frequently arise earlier than the others and may be detectable for life.

Certain precautions should be taken in shipping sera, blood samples, and brain tissue to the laboratory. Paired serum samples should be shipped at refrigerator temperatures. Whole blood and brain tissues should be collected aseptically and shipped or stored at -50° to -70° C. They must be sealed from carbon dioxide. At this temperature, the virus can remain viable for years. Specimens kept at refrigerator freezer temperature of -20° C progressively drop in titer and subsequently become non-viable in a short time. The viruses are also inactivated rapidly by acidic solutions, ultra violet light, heating to 60° C for 30 minutes, formaldehyde, ether, and sodium deoxycholate.

Because of the high incidence of California Encephalitis Virus (CEV) in children in 1964, The Ohio Department of Health initiated a study in the summer of 1965 to determine the incidence and extent of the encephalitic arboviruses in Ohio with special emphasis on CEV. CEV was originally isolated from mosquitoes in Kern County, California in 1943 and was first isolated in Ohio in 1964. Titers for CEV have been found in horses, cows, hares, rabbits, and ground squirrels in California; snowshoe hare, chipmunk, and deer in Montana; snowshoe hares in Michigan; turkeys and swine in Wisconsin; and ground squirrels in Ohio. The positive cases of CEV diagnosed in 1965 in Ohio all occurred in children. It has been found that adults often carry titers but report that they have either had mild symptoms or no clinical illness at all.

The Ohio study includes both serology surveys and field collections of mosquitoes and other possible vectors. The serology includes wild and domestic animals as well as humans.

The field work consists of collecting possible vectors by the use of light traps, aspirators, and sweep nets. In the laboratory arthropods are identified and then pooled according to species, collection locality and collection date. All work with possible vectors is done under chilled conditions. There are about 42 species of mosquitoes recorded in Ohio, 31 of which were represented in the collection of 1965. Twenty-seven thousand nine-hundred mosquitoes and a small sample of various other possible vectors were collected.

The arthropods are then ground and placed in a suspension of 25% normal rabbit serum and antibiotics. The suspension is centrifuged and the supernatant stored at -70° C for future inoculation. Two hundredth (0.02) cc. is injected into six one to two day old mice. The brains of any suspected positive mice are resuspended, centrifuged, and inoculated into another litter of suckling mice. If this second litter dies, they are frozen and saved for virus identification.

In 1965 CEV has been isolated from 2 species of mosquito from northern Ohio. No EEE, WEE, or SLE has been isolated thus far. Another virus of no known significance has also been found. The survey is being expanded in 1966.

Anyone interested in submitting specimens to the laboratory contact the Ohio Department of Health Laboratories, Virus section, 382 W. 10th Ave., Columbus, Ohio. (469-2280).
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On January 9, 1966, Omega Tau Sigma, Gamma Chapter, of The Ohio State University held its annual Initiation Banquet at the Student Union. Over 150 faculty members, alumni and students attended the banquet.

Honored at the banquet were 27 initiates to the fraternity:
Anderson, Scott
Buss, Roy
Cloyd, Gilbert
Coatney, Douglas
Cobb, James
Deckelbaum, Murray
Evringham, Keith
Flinn, Robert
Harroff, John
Heagren, Donald
Hersman, Richard
Johnson, Mark
Krop, Joe
Karr, Paul
Kuhlmann, Jay
Kurtzer, Stephen
Lafontaine, Daniel
Lutz, Ward
Lux, Francis
Matthews, Michael
Smatt, Robert
Steinman, Charles
Strickler, David
Trouten, Bill
Tracy, Charles
Ulmer, Daniel
Vago, Richard

President William Sayle, vice-president William Swartz, secretary Dale Duerr, treasurer Bob Fritz, and pledge master Michael Andrews were presented officers' keys. Senior Gamma Awards presented yearly to the three most outstanding seniors of Gamma Chapter went to Richard Böhnning, Thomas Haverfield and William Swartz. Dr. William Roenigk, Associate Professor of Veterinary Surgery and Radiology was presented the Gamma Alumni Award. Honorary memberships were presented to Dr. Robert B. Heath and Frank Kosec, O.S.U. Veterinary Pharmacy.

The National Gamma Award was presented to Dr. Mark L. Morris, Sr. of the Morris Animal Foundation for outstanding service to the veterinary profession.

Dr. Morris was cited for a wide variety of contributions to veterinary medicine. He is probably best known as an animal nutritionist who developed much of today's knowledge about dog and cat nutrition and now is tackling the mysteries of horse nutrition.

In addition, he launched a foundation which has supported the education of more than a hundred young veterinary scientists and 12 years ago established (Continued on page 28)
Renal Secondary Hyperparathyroidism in the Puppy

BY WILLIAM MEWBNORAND LARRY JULIUS, VET. MED. IV

Introduction

One function of the parathyroid glands is to control the amount of calcium and phosphorus in the body. A low calcium level in conditions such as pregnancy, rickets or renal insufficiency will cause an increase in the secretion of parathormone. Parathormone, in turn, will increase the renal tubular reabsorption of calcium, increase the distal tubular secretion of phosphorus, and increase the rate of bone resorption resulting in dissolution of the bone matrix and a subsequent proliferation of fibrous connective tissue to replace the matrix.

Primary hyperparathyroidism occurs when the quantity of parathormone produced is independent of the need, as in parathyroid adenoma. In secondary hyperparathyroidism, hypersecretion of the hormone occurs in response to a physiologic requirement of the body. This is always associated with bone disease and may arise as a result of renal disease and dysfunction.

Case History

A 6 month old male beagle cross was presented to the clinic on October 25, 1965 for an oral infection which manifested itself two weeks after removal of deciduous teeth.

The dog was very depressed, the maxillary area was enlarged and the teeth were movable by digital pressure.

Lab Data

The lab data were as follows: BUN—165 mg/100 ml.; alkaline phosphatase—6.5 Bodansky units/100 ml.; phosphorus—25.5 mg/100 ml.; calcium—13 mg/100 ml.; hemoglobin—6.6 gm/100 ml.; hematocrit—19% micro, RBC—2.89 million/mm³; WBC—20,450/mm³; segs.—3%, lymphs.—19%. The dog died on October 26, 1965.

Radiographic Findings

Figure 1 reveals generalized demineralization of the skull. It can also be seen that there was loss of the alveolar plate (lamina dura) surrounding the teeth. Mottled calcification of the calvarium is obvious.

Figure 2 is a radiograph of the left radius and ulna showing the severe demineralization of the long bones which, along with lesions in the skull, are characteristic of this disease. Thinning of the cortices can readily be detected along with subperiosteal bone resorption, seen especially well at the proximal and distal metaphyseal areas. The subperiosteal bone resorption gives an initial appearance of “lipping” of the epiphyses so often seen in cases of rickets.

Figure 3 is a unique demonstration of calcification of the rugae within the gastric mucosa. Although seen grossly at necropsy, this lesion is rarely demonstrated radiographically. Note also the increased density of the kidney.

Radiographic Differential Diagnosis

Alveolar periostitis can be excluded as a diagnosis since it is a localized lesion confined to the alveoli. In this case, lesions are generalized. Also, the subperiosteal bone resorption seen in the metaphyseal areas of the radius and ulna indicates that this is not a case of “lipping” of the epiphysis. Rather, this is a normal epiphysis with demineralization occurring just below the epiphysis giving the false appearance of “lipping.”

Primary hyperparathyroidism cannot be ruled out by radiographs since the only manifestation other than generalized demineralization would be a tumor formation of the parathyroid gland which could not be seen on radiographs.

Renal and nutritional secondary hyperparathyroidism can not be differentiated radiographically either but with
Fig. 1. Lateral Radiograph of skull showing generalized demineralization and loss of lamina dura.

Fig. 2. Lateral view of the left radius and ulna of the dog showing thin cortices and subperiosteal bone resorption.

Fig. 3. (above) Lateral view of the anterior abdomen showing calcium deposition on the rugae of the gastria mucosa.
the excellent anamnesis provided, it can be assumed that this case relates to a renal insufficiency.

**Necropsy Findings**

On necropsy hemorrhagic ulcers were found in the stomach. There were multiple hard raised areas on the surface of the kidney. A white mineralized layer 2 mm. thick was present just below the cortico-medullary junction. There was fibrous replacement of bone in the maxillary area and the parathyroids were enlarged. On microscopic examination the lungs, stomach and kidney showed various degrees of mineralization.

**Diagnosis**

The clinical diagnosis was renal secondary hyperparathyroidism due to fibrous interstitial nephritis. This condition manifested itself as fibrous osteodystrophy of a hyperosteotic form with marked growth of fibrous tissue.

**Pathogenesis**

The pathogenesis of the disease may be explained in the following manner: The kidneys, as a result of some disease, poison or drug became nephritic causing general glomerular and tubular insufficiency. Thus, the kidney’s ability to excrete phosphorus was decreased. The increase in serum phosphorus induced a relative decrease of blood calcium which stimulated parathormone release which in turn mobilized both calcium and phosphorus from the bone. Even with the increase in parathormone, the damaged kidney could not excrete the excess phosphorus and the cycle continued, eventually producing parathyroid hyperplasia.

The excess calcium and phosphorus from the bones that was not excreted through the intestines caused a metastatic or ectopic calcification in those tissues with a low pH or from which an acid is excreted; namely, the kidney, lung and wall of the stomach. The calcium deposition in the kidney led to more damage which further retarded phosphorus excretion.

Some of the accumulated phosphate ions were then eliminated via the digestive tract where they combined with the calcium in the food, depriving the body of yet another source of calcium.

Depression of the blood producing elements of the bone, resulting in the severe anemia of this dog, was presumed to be due to fibrous replacement of the bone marrow caused by the increase in parathormone. The severe damage to the kidney probably reduced secretion of erythropoietin, a factor in blood formation which generally increases with anemia.

The destruction of renal tissue also caused the rise in the blood urea nitrogen.

*The authors wish to thank Drs. Milton Wyman and William Roenigk for their assistance in this case report. Radiographs were available through the courtesy of Dr. V. L. Tharp."

**REFERENCES**


**STUDENT A.V.M.A. NEWS**

**BY DAN PAULO, VET. MED. III**

Many interesting and entertaining activities have been occupying the program of the student chapter this winter quarter. Attendance and participation has also struck a new high. The junior class has 100% AVMA membership this year.

Speakers’ programs presented thus far this quarter have included Dr. Ray Smith of Jeromesville, Ohio, who spoke on “Coon Dogs,” Dr. William Strayer of Sandusky, Ohio, who presented an illustrated lecture on his experiences in Ethiopia, and Dr. Ronald Wright, Assistant Director of the Environmental Physiology Laboratory at O.S.U. Research Center, who spoke on “Opportunities for Veterinarians in the Biological Sciences.”

February 11 found most of the faculty and students in the college enjoying a very successful Fun Night. Skits were presented by each class and fraternity and several rather unique door-prizes were awarded to lucky individuals.

Students and faculty enjoyed the annual square dance in February and are now looking forward to the Spring Awards Banquet on April 23.
This year, as in the past, we sent questionnaires to the sixty-seven graduates of one decade ago. The questionnaires requested the following information: address, type of practice, number of children, activities pertaining to veterinary medicine and activities in the community, changes noted since graduation, hobbies, and the most valuable course of study in the College of Veterinary Medicine.

We thank the 46 veterinarians (69%) who responded to the questionnaire. Only 44% responded last year, 72% of the Class of 1954 answered, and only 41% of the Class of 1953 were represented.

As far as we know, one member of the class is deceased, and one member is disabled. Fourteen are engaged in small animal practice, 4 in large animal practice, 1 in equine practice, 14 in small animal and large animal work, 2
in teaching, 1 in research, and 8 in public health.

The average number of children sired by this mighty class is 2.4. Twenty-six of the men live in Ohio, 7 in Indiana, 2 in Illinois, 2 in Missouri, 1 each in Kansas, California, New York, Wisconsin, Tennessee, Massachusetts and 2 in Kentucky.

The most valuable course of study varied with the type of work in which the men were engaged. Those in public health found preventive medicine to be of the most benefit; those in practice felt clinics, medicine, and surgery to be beneficial; many cast ballots for the basic sciences of physiology, pathology, parasitology, anatomy, etc. On the whole, most men felt that all the courses were of equal importance.

Dr. John Andreas is in a general practice consisting mostly of dairy cattle at R. # 5, Marysville, Ohio. He enjoys all sports, especially deer hunting and fishing and is the father of two boys and one girl. He was a member of the Dairy Panel of the O.V.M.A. meeting in Columbus on February 8, 1966. Upon graduation, Dr. Andreas bought Dr. Engard's practice and has since built a new hospital and acquired an associate, Dr. J. P. Buroker. He has noticed that each call is worth more money than in the past due to larger farm operations.

Dr. William E. Bates is in general practice at 10217 New Haven Road, Harrison, Ohio, and is the father of two girls and two boys. In his leisure hours, he golfs and participates in family activities. Besides being a member of the Cincinnati, Ohio, and American Veterinary Medical Associations, he works with the Boy Scouts, Pee Wee Baseball, and the Kiwanis Club. He has noticed that management has improved both in large and small animal areas.

Dr. Ernest G. Boone, Jr., can be found in a small animal practice at 55th Street and Wolf Road, Western Springs, Illinois. He is the father of two children and spends the little leisure time he has at boating and golf. Apparently reminiscing, Dr. Boone mentioned seminars at Larry's. (Larry's is still in existence, by the way.) He is a member of the Board of Directors of the C.V.M.A. and a member of the Illinois and American V.M.A. Besides new techniques, Dr. Boone has noticed an increased interest in felines as pets.

Dr. David R. Bright of Rossville, Indiana, is in a mixed practice with his brother. The father of two boys and two girls, he spends his leisure time at the golf club, coaching the Little League, and as superintendent of the Methodist Church. In addition, he is a member and past officer of the Northwestern Indiana V.M.A. and a member of the state association. He has noticed a change in the diseases immunized against in large animals and a change in the type of products used and services rendered.

Dr. Donald T. Buck, R.R. 1, London, Ohio, is in general practice and maintains an S.P.F. Swine Laboratory. He has two children and is busy with farm development and the S.P.F. Swine Program. In addition to the office of president of the Ohio S.P.F. Association, he is active in his church and assists the Young Farmer's Association. Dr. Buck remarks that there are very few small dairy farms and that farmers are more cognizant of medicine than they were in the past.

Dr. Harry Conley, the father of two girls, is in general practice in Belle Center, Ohio. Besides golf, boating, and reading, Dr. Conley is President of the West Central V.M.A. and the Chamber of Commerce. He is also a member of the Northwest V.M.A., Sunday School superintendent, and is in his second term as a Councilman in Belle Center. He has noticed an increase in small animals and decrease in large and wishes luck to all who are nearing the age of "40" since it is said that at "40" life begins.

Dr. David Cooley, 7322 Olcott Ave., Hammond, Indiana, is in small animal practice at 7400 Indianapolis Blvd., Hammond, and has three children. Interested in all sports, he is past president of the Calumet Area V.M.A., and a member of the local, state and national V.M.A. In addition, he is a member of the A.A.H.A. and the Hammond Board of Health. He remarks that people will pay to save their animals but prefer prevention to cure. Anyone who is in the area is invited to stop in to see old friends.

Dr. William H. Davis of 3929 E. Jack-
son Blvd., Elkhart, Indiana, is in small animal practice and has one daughter and one son. He spends his limited leisure time snow skiing, gardening, participating in community activities, reading, and is a probation officer for the rehabilitation of juvenile delinquents. He has served as secretary, vice-president, and, now, president-elect of the Michiana V.M.A. His practice is uniformly distributed throughout the year and agrees with Dr. Cooley that clients are willing to do everything possible to keep their pets alive. He also remarks that there is more refinement in surgical techniques and is surprised to be doing so much stifle surgery. He also believes that diagnosis is accomplished by more thorough means than previously.

Dr. Thomas A. Dunderman of 5308 W. 130 St., Cleveland, Ohio, is in small animal practice in Parma, Ohio. The father of one child, he claims hobbies of photography and reading; he is a member of the O.V.M.A., A.V.M.A., Cleveland Academy of Veterinary Medicine and finds much of his practice to be devoted to felines.

Dr. J. S. Elder is in small animal practice at 2929 Belmont Ave., Youngstown, Ohio. He has two children and considers his practice to be his hobby. He is active in the local, state, and national V.M.A. and aids the Boy Scouts. Besides the above, Dr. Elder is a member of the Jewish Welfare Board. He states that veterinary medicine is changing from an art to a science with increased information available for the practitioner. The information is presented not only in published form but also as short courses.

Dr. Daniel A. Farwick is in equine practice at 9950 Snider Rd., Mason, Ohio. The father of three children enjoys water skiing, quail and pheasant hunting. He is a member of the A.A.E.P. and the A.V.M.A. and has seen an increased interest in racing and show horses with a growing number of Standardbreds present in the area.

Dr. Harrison M. Gardner is living at 2425 Shrewsbury Road, Columbus, Ohio, and teaches Ambulatory at Ohio State. He enjoys flying and fishing and is the father of two children. He has also found an increase in the number of horses seen in today's practice.

Dr. David Hein is the head of clinical research at Jensen Salsbury Laboratories and can be found at 9711 W. 92 Street, Shawnee Mission, Kansas. He is the father of two boys. Before joining Jen-Sal in 1963, he was engaged in private practice. Although practice was enjoyable, the work at Jen-Sal is more challenging for him. He likes Kansas City but misses all friends in Ohio.

Dr. Richard W. Johnson 424 Reading Road, Mason, Ohio, is in small animal practice and has no children. Besides golf, handball, bridge, and reading, he is a member of the Kiwanis Club of Mason and the Presbyterian Church. He is also a member and District 3 representative of the Board of Trustees of the O.V.M.A. Like Dr. Davis, he has noticed an improvement in diagnostic and surgical techniques. He is happy to see that we are finally going to get a new clinic because "this will keep Ohio State the best college in the country."

We are sorry to announce that Dr. Albertha Joseph has passed away. She will be missed.

Dr. Merle T. Kelley of 2909 West Prospect, Ashtabula, Ohio, is in small animal practice and has one girl and one boy. His hobbies are handball and football; he is a member of the local Rotary and the Y.M.C.A. He is a member of the A.V.M.A. and the Cleveland Academy of Veterinary Medicine and is now helping with the organization of an Ashtabula County Veterinary Association. He has found that communications between veterinarians have improved with greater knowledge resulting.

Dr. Charles E. Kendall can be found at the Greece-Ridge Animal Hospital at 4200 Ridge Road W., Rochester, New York, 14626. He is also the supervising veterinarian for the State of New York in the division of Meat Inspection. Dr. Kendall has been in practice for three years. He is the father of four children and swimming occupies most of his leisure time. He is past president of the Monroe County V.M.A.

Dr. Robert W. Kerpsack claims 6195 Tippecanoe Road, Canfield, Ohio, as home. He and his brother, Dr. William Kerpsack, maintain a mixed practice at 707 South Meridian Road, Youngstown, Ohio, 44509. Dr. Robert has two
boys and one girl and spends his leisure time at his farm or his in-laws' summer home in New York. He is a reserve officer in the Veterinary Corps of the U.S. Army. He feels that since the dog has become an integral part of family life, a medical insurance program is sorely needed. He also feels that the status of the veterinary profession can not be upgraded until veterinarians curtail their non-professional services such as grooming and boarding.

Dr. William Kerpsack, on the other hand, has no children and finds golf, reading, and socializing fill his leisure time. A member of the A.V.M.A., the O.S.M.A., and the Mahoning County V.M.A., he also speaks at the local kennel club meetings, is a member of the Children Conservation League, and is the Assistant Chief Veterinarian for the Youngstown Board of Health. In addition, he is sponsoring a foreign student at Youngstown University and is active in the American Field Service (International High School Student Exchange). He feels that veterinary medicine is becoming a psychiatric field in that the emotional needs of the owner must so often be treated, as well as the physical needs of the animal. He also believes that the public's concept of Veterinary medicine is an old one. "Our veterinary profession needs some advertisement in weekly circulated magazines or newstand publications."

Dr. Keith L. Kraner, as of March 1, became a staff member at the University of Missouri, Columbia, Missouri. He is the chairman of the Lab Animal Medicine department in the School of Medicine and is a Professor of Surgery and Medicine in the School of Veterinary Medicine. He has two girls and spends his leisure time flying, hunting, taking pictures, and traveling. He has published sixteen professional articles and book sections and has lectured at numerous local, state, national and international conferences. In addition, he is a committee member of the National Academy of Science and the National Research Council. After graduation, he joined the staff of the State Diagnostic Laboratory at Harrington, Pa. In April 1957, he joined the U.S. Air Force and was assigned to the Aerospace Medical Laboratory at Wright-Patterson Air Force Base. In November 1958, he was transferred to the Armed Forces Institute of Pathology in Washington, D.C., where he conducted, supported, and collaborated in a wide variety of medical investigations until the present time.

Dr. Marvin L. Lee is in a small animal practice with Dr. G. T. Lee at 5219 Nichol Avenue, Anderson, Indiana. He has two children and spends his free time traveling and trout fishing. He feels that the biggest change in the profession has been the big demand for small animal practitioners with a decrease in the number of large animal practitioners required.

Dr. William Lovell, 303 W. 6th St., Bowling Green, Kentucky, is in large animal practice with Dr. David Miller (O.S.U. '62). They maintain two offices, one in Bowling Green, and one in Smiths Grove. He has three girls and one boy and enjoys fishing and "resting his eyes." He is a member of the K.V.-M.A., A.V.M.A., Ky. Mastitis Committee, and Bovine Practitioners Association. He remarks that there is increased specialization and hopes that Veterinary colleges will place more emphasis on preventive medicine, nutrition, and management.

Dr. Leland C. Lynch, Jr., of 3410 Tutus Avenue, Middletown, Ohio, is the father of two boys and is in small animal practice. His hobbies are golf, bowling, and home movies. Besides belonging to the A.V.M.A., C.V.M.A., B.C.A.V.M., O.V.M.A., and A.A.H.A., he speaks to the students at career day at the local junior high school. He is also a member of the Optimist Club, Chamber of Commerce, Y.M.C.A., and an Elder in the United Church of Christ. Dr. Lynch has noticed an increase in geriatric treatment and orthopedics. He remarks that there has also been a trend toward specialization.

Dr. John W. Miller is residing at Noel, Missouri, and is working in poultry inspection in Decatur, Arkansas. He has four children and genealogy is his hobby. He is a member of the North American Federal Veterinary Association, president of the Chamber of Commerce, and a member of the Draft Board. As opposed to Dr. Lynch, he notices a tendency toward diversifica-
tion in Veterinary Medicine.

Dr. Thomas O. Miller was engaged in large animal practice in Indiana until he was disabled with arthritis in May of 1963. He presently lives at 5150 E. Rosewood, Tucson, Arizona 85711. Dr. Miller is the proud father of two girls and two boys.


Dr. Joseph Orthoefer is with the Dayton Division of Health. He has one daughter and resides at 4134 Redonda Lane, Dayton, Ohio. In his spare time, he enjoys gardening and is active as a member of the Salem Lutheran Church, Community Health Assn., and the Urban League Sanitation Committee.

Dr. Merlin R. Oswalt lives at 464 State Route 503, West Alexandria, Ohio, where he is engaged in general practice consisting of mainly large animals. He is the father of three children, and spends his leisure moments reading, fishing, and participating in church activities. In his practice, he has noticed a decline in swine practice, and an increase in dairy and small animals. He finds his general practice most rewarding and is looking forward to many more productive years of practice.

Dr. Norbert P. Page is a Major with the USAF and lives at 1791 S. Norfolk St., San Moteo, Calif. He is engaged in radiation biology research at the U.S. Naval Radiological Defense Lab., San Francisco, Calif. Dr. Page enjoys tennis, golf, and bowling, and is a member of the Toastmasters Club. He is the proud father of three children.

Dr. John W. Richardson is employed by the State of Ohio where he is Veterinarian-in-Charge of Poultry Disease Control, State Meat Inspection program, and special epidemiological problems. He attended the University of Michigan and received a Masters degree in Public Health in 1960. He resides with his wife and three children at 5578 Satinwood Dr., Columbus 24, Ohio.

Dr. Jack M. Rogers lives at 538 Center St. in Orrville, Ohio, where he is busy with a mixed practice. His leisure time is dominated by camping, fishing, and big game hunting. He has noticed the tremendous increase in preventive medicine measures and the increase in the number of animals treated per call. Dr. Rogers is the father of three children.

Dr. Ned W. Rudd has two children and is engaged in a mixed practice at Plymouth, Indiana. He is active in several veterinary organizations, local church activities, Junior Chamber of Commerce, and others. In his spare time, he enjoys fishing and hunting. Since graduation, he has noticed the increased emphasis on dispensing and consultation in the large animal portion of his practice.

Dr. Richard N. Schmidt is a regulatory veterinarian with the U.S. Dept. of Agriculture. He lives at Box 156, Rt. 2, Vienna, Ohio. Dr. Schmidt has five children.

Dr. Gerald L. Shook lives at Evergreen Hills, Rt. 2, Granville, Ohio 43023. He is S.E. Supervisory Veterinarian for the U.S.D.A. He spends his leisure time with his two sons, and also enjoys photography and woodworking.

Dr. Carlton C. Stanforth has a small animal practice in Kokomo, Indiana. He is active in the local and state veterinary associations, the Episcopal Church, Chamber of Commerce, YMCA, and many others. In his leisure time, he enjoys fishing, swimming, and bowling with his family.

Dr. Dustin Stinson has a general practice at Clarksburg, Ohio. The past ten years in practice he has noticed the demise of the small farm, especially the small dairyman. Dr. Stinson enjoys bowling; he coaches a Little League Baseball Team, and is active in many local organizations. He passes along this humorous anecdote: Dr. Stinson successfully repaired an abdominal bullet wound of the mayor's cat after the cat was shot by a neighbor when it was found in the neighbor's chicken house. The mayor fined his neighbor $50.00 and costs for discharging firearms within the city limits.
Dr. James T. Stockstill lives at Rt. 2, Sidney, Ohio, and operates a mixed practice. He has two children, enjoys boating, and is active in Jaycees, Lions Club, United Fund, Chamber of Commerce, and others. During the past ten years of practice, he has noted the specialization of both farm operations and large animal practice. He feels that the client's image of the veterinarian has been upgraded.

Dr. Caroll S. Stottlemyer was stationed in Formosa as an Air Force Veterinarian for two years following graduation. He now has a predominately small animal practice in Wabash, Indiana. He enjoys swimming, bowling, and is active in several local organizations. During his eight years of practice, he has noticed the rapid change in small animal practice through better service and a clientele more and more appreciative of it. Dr. Stottlemyer has two girls.

Dr. Wallace E. Townsend is the father of four daughters and resides at P.O. Box 336, Gillett, Wisconsin. Since graduation, he has been active in many local organizations. In his leisure time, he enjoys ice-skating, hiking, camping, and swimming with his family. Dr. Townsend has gone from a partnership to a 90% dairy practice of his own. He and his family extend their welcome to anyone who may be traveling or vacationing in northern Wisconsin.

Dr. James L. Warner operates the Cloverleaf Animal Clinic in Memphis, Tennessee. He resides with his family of six at 228 Betty Jo Lane. Dr. Warner is presently the president of the Memphis and Shelby County Veterinary Medical Association.

Dr. Jerry L. Welbourn is a veterinary food technologist with the U.S.A.F. in Natick, Mass. In 1961 he received a Masters degree in food technology from M.I.T., and in September of this year, he plans to start working toward a Ph.D. Dr. Welbourn is an active participant in canoe racing and competed in the National Canoe Championships this past summer. He lives with his family of three boys at Military Reservation, R.F.D., Box 17C, Hudson, Mass. 01749.

Dr. Richard S. Witter operates an 80% small animal, 20% equine practice in Columbus, Ohio. He has two children, and enjoys skiing, swimming, and handball during his leisure hours. His activities include O.V.M.A., A.V.M.A., A.V.R.S., A.A.E.P., 1966 president of Columbus Academy of Vet. Med., president of his local P.T.A., and others. Since graduation, he has noticed the small animal client's desire for more "in depth" veterinary service. His address is 640 Wilson Rd., Columbus, Ohio.

Dr. Wilfred C. Wood has four children, and lives at 3736 Falbo Ave., Lorain, Ohio. He operates a small animal and equine practice. Over the past few years, he has observed how economics have improved so that medical and surgical treatment is not governed wholly by an intrinsic value placed on the pet by the owner. Dr. Wood is a member of the A.V.M.A., O.V.M.A., Lorain Co. V.M.A., Cleveland Academy of Vet. Med., Lorain Board of Education, Rotary, Y.M.C.A., others.

Dr. Roger A. Yeary is presently an Assistant Professor in the Dept. of Veterinary Preventive Medicine at the Ohio State University, College of Veterinary Medicine and Extension Veterinary Toxicologist with the Ohio Cooperative Extension Service. Dr. Yeary resides in Columbus.

Dr. Lynch would like to initiate plans for a class reunion. He would appreciate hearing from all who are interested. He would also like all those who did not respond to the questionnaire to notify him of their correct addresses.

(Cont. from page 19)
You're The Doctor

BY VICTORIA VOITH, VET. MED. AND ROBERT FRITZ, VET. MED. III

CASE ONE:

You are presented with a 5 yr. old Jersey cow which had a normal parturition six days previously. The cow had eaten the placenta. The next day she went off feed and had a dark, tarry diarrhea. When you examined her you found: General appearance—healthy; temperature—102.4; odor of breath—normal; respiration—normal; a hollow sound, indicative of a gas filled organ, was auscultated on the right side. Palpation revealed no distended organs, no placenta in the uterus, normal left uterine horn, and a 4” diameter of the right horn. Old adhesions were found on the right side.

A displaced abomasum is frequently associated with parturition and signs of tarry diarrhea, anorexia, a characteristic “ping” auscultated on the right side, abducted elbows, shallow breathing and expiratory grunts are exhibited. The only similar signs shown by the Jersey were tarry diarrhea and anorexia. A hollow sound heard on the right side was not of the characteristic “ping”. The old adhesions could have trapped gas and produced these hollow sounds.

Since the history indicated she had eaten the placenta, although her breath was not foul, the other signs manifested indicate the placenta may be caught at the reticulo-omasal orifice. In this case you would proceed with a laparotomy from the left side to remove the placenta, rather than a right side approach to replace the abomasum.

Diagnosing this as a placenta in the rumen you begin the laparotomy, discovering fresh adhesions of the spleen to the abdominal wall and ventral surface. The abomasum was not displaced. The placenta was found free in the rumen and no objects or penetrating foreign bodies were found. You removed the placenta and complete the surgery without complications. The next morning the cow does not rise and dies during the day. What is your diagnosis?

CASE TWO:

Bob Rooney purchased an 8 yr. old mare for his wife at the recent Delaware Co. sale. She is the dam of a filly purchased last fall at a similar sale. Bob bought her because she is also the dam of a 3 yr. old who has a record of 2:03 at the pace and his 2 yr. old filly shows great promise; he proudly adds her to his broodmare band.

The 15th of March finally arrives after a cold winter and Mrs. Rooney is getting race fever, so she hops in her Cadillac and heads for their spring training quarters. As Mrs. Rooney enters the barn and greets her trainer, she notices that he looks concerned. He tells her that the filly has training cough. The filly seems better today but her temperature had been up to 105°F two days ago, and then the cough went through the barn. Mrs. Rooney and her trainer decide to take the filly home and if she recovers completely, send her back for further training.

Upon returning to the farm, the filly seems to be over her cold and coughing very little. Three days later, Bob telephones you and excitedly tells you that a couple of his mares are not eating and would like you to stop at your earliest possible moment. Upon arriving at the barn, you notice that the two mares are depressed, did not clean up their feed, and have temperatures of 104.8 and 103.5. A serous nasal discharge is seen in the mare with the higher temperature. Auscultation reveals congestion of the lungs in both mares. As you walk through the barn to examine the other mares, you notice the filly and ask Bob why she is home. Bob tells you the story and you decide to examine the filly yourself. You notice that there is no enlargement of the mandibular or pharangeal lymph nodes. Going back to check the mares more closely, you notice no conspicuous lymph

(Continued on page 38)
The AVMA Auxiliary began its 1966 year with many interesting speakers. January 11, Dr. Milton Wyman and Sidney Foster, M.D., spoke to the group on “Diseases Transferable to Humans”, and “Emergency Care” respectively. February 8, Mr. Robert Hadley spoke on “Legalities in the Veterinary Profession.”

Among the Educational Classes for senior Auxiliary members the following sessions were held:
- Tour of Goss Lab .......... Dr. Cole
- Emergency Procedures . Dr. Wenger
- Public Relations ............ Dr. Kukor
- Parliamentary Procedures .......... Mr. Don Noah

In addition to the annual money-making project of selling candy and candles, our organization has available stationery with the veterinary Caduceus emblem printed on each sheet.

Our Service Project Committee has been very active with several projects consisting of the following: Goodwill Industry bags, used Christmas cards for the Sunshine Recreation Center, needy family food baskets, and birthday gifts amounting to a total of $10 per month for Franklin Village.

A special committee was appointed to establish a baby furniture pool. Donations of baby furniture are now being accepted by the Auxiliary for use by active members only.

New officers were elected at the March 1966 meeting. The past officers would like to take this opportunity to thank our adviser, Mrs. Keith Wearly, for her expert advice and suggestions during the past two years. Mrs. Wearly is also the 1965-66 vice-president of Public Relations for the AVMA.
Blood Urea Nitrogen

BY MIKE YOUSHAK, VET. MED. III

The blood nitrogenous constituents are divided into two groups — protein and non-protein. The non-protein nitrogenous substances consist of urea, creatine, creatinine, uric acid, and/or allantoin, amino acids, and ammonia. Urea is the nitrogenous “waste product” in this list which is present in the highest concentration in the blood.

Urea makes up approximately 50% of the non-protein nitrogen in normal healthy animals, but in disease it may rise to 75%. Urea is formed in the liver from amino acids which are utilized for their caloric value. Urea and ornithine are produced from the amino acid arginine by the enzyme, argenase. Urea as well as most of the other nitrogenous wastes has no further function within the body; subsequently they are removed from the body through the kidneys. Urea passes out of the blood in the glomerular filtrate. Reabsorption of 40% of this urea occurs passively in the tubules in association with the reabsorption of water.

Since urea is excreted from the body almost exclusively in the urine, it is obvious that any interference with this excretion in the presence of continued protein catabolism would result in an increase of the urea concentration in the blood. Therefore, the urea level of the blood can be used as an indication of renal function. A simple screening test, the Urograph (Warner-Chilcott) or the BUN-O-Graph (Haver-Lockhart), for determining this blood urea nitrogen without the need of expensive equipment or chemicals is available for use by the practitioner.

Screening Tests

The Urograph or BUN-O-Graph is simply a strip of chromatography paper having four zones: a urease zone, a potassium carbonate zone, a barrier zone, and an indicator zone of brom cresol purple. The test is set up by placing 0.2 ml. of the patient’s serum into a chemically cleaned and dried 10 x 75 mm. test tube. The chromatography strip is inserted into the center of the test tube and is then allowed to stand in an upright position at room temperature in a draft-free area for 30 minutes. During this period the following reactions occur: The serum travels up the paper strip by capillary action. The buffered urease of the first band reacts with the urea of the serum producing ammonia which, in turn, is liberated as a free gas after reacting with the potassium carbonate of the second band. The barrier band prevents the continued rise of the serum to the indicator band.

The ammonia gas is liberated in a quantity exactly proportional to the original urea nitrogen concentration of the serum sample, and it then continues to rise up the test tube until it contacts the indicator portion of the strip. The indicator changes from yellow to blue as the ammonia is absorbed, the height of this color change being proportional to the amount of ammonia gas. If there is no color change, this indicates less than 10 mgm./100 ml. urea nitrogen concentration in the serum; a hair-breadth of color (less than 0.5 mm.) indicates 10 mgm./100 ml.; each additional 0.5 mm. of color change indicates an additional 2.5 mgm./100 ml. If BUN values above 75 mgm./100 ml. or below 10 mgm./100 ml. are desired, the original serum sample may be diluted with commercially available serum controls, the test repeated, and appropriate calculations made. Complete information is included in the package literature.

The test should be performed in duplicate, and a control of known blood urea nitrogen concentration also should be included in the procedure. The results from the duplicate sample and from the control should correlate closely indicating that a minimum number of variables are involved in the test materials and the technique. The test strips should be kept tightly covered in a refrigerator. They will be stable up to one year if protected from ammonia fumes, heat, or moisture.
Azotemia and Uremia

Elevated BUN values above normal occur when kidney excretion of urea is impaired. This increase of urea in the blood is accompanied by a similar increase in concentration of the other non-nitrogen waste products. The build up of these constituents in the blood during renal failure is called 'azotemia.' The clinical syndrome accompanied by azotemia and characterized by signs of vomiting, depression, decreased body temperature, uremic breath odor, weakness, anorexia, possible cough and dyspnea, muscle twitching, blood in the vomitus or stool, and/or coma is called 'uremia.'

The toxicity of urea itself is very low; therefore, toxic substances such as aromatic phenols and ammonia, which are retained when the urea is retained, are incriminated in producing the uremic signs. These substances are responsible for the chronic or gradual course of the disease and for the oral mucosal ulcerations, hemorrhagic gastritis, enteritis, uremic pneumonia, and eventual death. A second cause of death may be the rise of serum potassium associated with the retention of other substances and its effect on the heart. This is infrequently seen in animals.

The mechanisms of uremia may be divided into three groups: 1) prerenal uremia, 2) renal uremia, and 3) postrenal uremia. Prerenal uremia results from impairment of renal circulation and its associated decrease in renal clearance. In renal uremia there is some abnormality of the kidney itself resulting subsequently in abnormal renal function. In postrenal uremia there is some obstruction or obstructive lesion of the ureters or lower urinary tract resulting in an increase in back pressure against which the kidneys can not normally function.

Variations in Bun

Abnormal BUN concentrations can be determined in several specific conditions. Some of these can now be enumerated. There are certain conditions in which an abnormally low BUN may be seen. These are severe hepatic disease where disfunction of the liver cells results in a decrease in urea production and associated BUN values below 8 mgm./100 ml., normal animals fed a low protein diet, and starved animals. Slight elevations in the BUN may be due to dietary intake of high protein foods as seen in the dog and cat. Moderate fluctuations in the BUN in ruminants reflect normal rumen and rumen flora function. (Rumen bacterial metabolism may result in urea production with subsequent absorption of this urea into the blood of the animal.)

Prerenal Uremia

Marked increase in the BUN in prerenal uremia can result in acute peripheral circulatory failure as in shock and in congestive heart failure. It may also occur in conditions of abnormal fluid and electrolyte balance and of lowered blood pressure such as dehydration, severe vomiting, persistent diarrhea, excessive sweating, massive hemorrhage, severe burns, intestinal obstruction, acidosis of diabetes mellitus, acute pancreatic necrosis, and allergic reactions. Occlusion or obstruction of renal vessels ultimately leads to prerenal uremia. Occlusion may result from thrombosis of especially neoplastic origin, but thrombosis of any origin may be considered. Compression is usually due to neoplasms, abscesses, or other impinging masses.

Renal Uremia

Renal uremia is the most important of the three classes. It only occurs in kidney lesions that are severe enough to cause renal insufficiency. Focal, healed, latent, mild, or compensated forms of nephritis, without functional incapacity of the kidneys, are characterized by normal or very slight elevations in the BUN.

The most common cause of renal uremia in the dog is uncompensated chronic interstitial nephritis, whether it is due to leptospirosis, other bacterial agents, toxemias as seen in pyometria, severe necrosis in burns, and intestinal obstruction, or prolonged high fever. Other causes are polycystic kidneys, renal amyloidosis of chronic infections and renal tubular epithelial degeneration as in mercurial, phenol, arsenic,
phosphorous, or ethylene glycol toxicities. Chronic bilateral pyelonephritis, bilateral suppurative nephritis, and allergic reactions to sulfonamides also result in elevated BUN. Intravascular hemoglobin release in hemolytic conditions such as lead poisoning, piroplasmosis, transfusion reactions, snake venom injections or infections due to *Clostridium* or *Leptospira* must also be considered. Destruction of the kidneys by primary neoplasms, for example nephroblastoma, or secondary neoplasms, such as malignant lymphoma, occurs occasionally resulting in loss of renal function.

**Postrenal Uremia**

Postrenal uremia as written previously results from obstruction of the lower urinary tract leading to hydronephrosis with cessation of renal excretion. Urinary calculi are the most common cause of postrenal uremia. These obstructive calculi are rarely located bilaterally in the ureters. More commonly they become lodged in the urethra according to normal variances in the anatomy of the urethral tract of the various domestic animals. The predilection sites of such obstructions are in the urethra posterior to the os penis in the dog; in the urethra proximal to the sigmoid flexure of steers and bulls; in the urethral process of rams; and in the urethra proper in male cats. The shorter, wider urethra of female animals decreases markedly the incidence of obstructive calculi in these animals.

Other causes of postrenal uremia are urethritis, cystitis with associated obstruction of the ureters, tumors or calculi of the bladder, carcinomas or hypertrophy of the prostate, fractures of the os penis, congenital anomalies of the urinary tract, and rupture of the bladder.

**Therapy Evaluation**

The blood urea nitrogen test can be used in many of these specific conditions as a diagnostic aid especially in conjunction with other blood tests and urinalyses. It can also be used to evaluate therapy. For example, in long term fluid therapy, in peritoneal lavage, or in nephrotoxic drug therapy the Urograph or BUN-O-Graph provide a means for examining the improvement or deterioration of renal function during this therapy.

In addition, the results obtained from this test can be used to evaluate a patient, especially an aged dog, as a surgical risk and to detect possible postsurgical renal failures. Finally, BUN determinations aid prognosis. The prognosis in a disease syndrome is good if the BUN is steadily decreasing in conjunction with improved clinical appearance of the animal. The prognosis becomes grave when the BUN continually rises despite therapy.

Through the use of this inexpensive simplified blood urea nitrogen test the practitioner has available an accurate procedure which can be used routinely to determine kidney function status for the purpose of aiding diagnosis, evaluating therapy, and indicating prognosis.

**BIBLIOGRAPHY**


(Continued on page 37)
This child may be in school before a Stable Cell Line-produced tissue culture vaccine is available for her protection. But her dog can already be protected with this improved type of vaccine—Enduracell. Enduracell's highly antigenic viruses are grown on the Stable Cell Line, a medium which provides infinite quantities of genetically identical cells with unvaried quality—without resorting to new tissue donors. This is why Enduracell is uniform, serial after serial, year in and year out.

1930

Dr. C. K. Mingle, foremost authority on brucellosis, retired from the U.S. Department of Agriculture, December 30, 1965.

In 1950, Dr. Mingle received the Department’s Superior Service Award for the leading part he played in developing the background and shaping policies for the eradication of brucellosis of domestic animals in the United States and foreign countries. At this time, the disease affected about 20% of the herds and 5% of all cattle in the United States.

In 1956, Dr. Mingle was given the responsibility of directing the Federal aspects of the National Brucellosis Eradication program. In 1963, his responsibilities were increased to include all cattle diseases—a position he held until retirement. During this ten year period, two out of every three of the nation’s counties reduced the incidence of brucellosis to less than 1% and attained a Modified Certified status. Today, 87% of the nation’s counties are Modified Certified Brucellosis Areas.

In 1962, Dr. Mingle was granted a Distinguished Alumnus Award from Ohio State University, College of Veterinary Medicine. It was here that he received his degree of D.V.M. in 1930, a M.Sc. Degree in bacteriology in 1934, and served as a member of the faculty during the following three years.

Dr. Mingle started his career with the Department as an employee of the Pathological Division, Bureau of Animal Industry at the Agricultural Research Center, Beltsville, Md., in 1937. He assisted in the development and application of the only vaccine (Strain 19) available for the control of brucellosis in cattle.

His recent participation in international meetings include the Third International Meeting on Diseases of Cattle held in Denmark in 1964 and the Second FAO/WHO International Conference on Veterinary Education held in Denmark last year. He holds a membership in the World Health Organization, a division of the United Nations, as a contributor on brucellosis.

1951

Dr. F. J. Mulhern, Director of the Animal Health Division, ARA, Hyattsville, Maryland, announces the assignment of Dr. Joseph V. McAlpin as Assistant Veterinarian in Charge in Charleston, West Virginia.

After graduation, Dr. McAlpin entered Federal Service as a Veterinary Livestock Inspector with the Bureau of Animal Industry in Cambridge, Ohio. The following year he transferred to Greenville, Ohio, as Area Veterinarian, and in 1957 was transferred to Danville, Kentucky, as District Veterinarian. He participated in the 9th Veterinary Administrator Development Program 1962-1963 and at the end of the program returned to his official station in Kentucky until his transfer to Massachusetts in 1964 as Assistant Veterinarian in Charge. He remained in this position until August 1965 when he transferred to West Virginia.
Dr. McAlpin is married and has a daughter and a son. His hobbies are Glee Club, choir, camping, hunting, and fishing.

1953

The appointment of Dr. Ernest G. Ongert as Veterinarian in Charge of ANH Division activities, Honolulu, Hawaii, effective January 7, 1966, was announced by Dr. F. J. Mulhern, Director of the Animal Health Division. In his new assignment, Dr. Ongert will be responsible for administering the Division's programs dealing with control and eradication of diseases of livestock and poultry in cooperation with State officials in Hawaii.

Dr. Ongert was formerly stationed at Oklahoma City, Oklahoma, as Assistant Veterinarian in Charge of the Division. Dr. Ongert conducted a private practice in Ohio until 1955, at which time he joined the ADE Division as Area Veterinarian. In 1958, he became District Veterinarian and in 1959, started training under the Sixth Veterinary Administrator Development Program. Dr. Ongert's first assignment upon completion of the VADP was as scabies specialist in Iowa. He was assigned Assistant Veterinarian in Charge in Oklahoma in 1961.

Dr. Ongert is a member of the AVMA, Oklahoma State Veterinary Medical Association, National Association of Federal Veterinarians, USLSA, and Lions Club. He is married, has two sons and one daughter.

1957

Secretary of Agriculture Orville L. Freeman announced the appointment of Dr. Jack C. Leighty as assistant deputy administrator for consumer protection in USDA's Consumer and Marketing Service. Dr. Leighty was formerly head of the laboratory section of USDA's poultry inspection branch.

A native of Akron, Ohio, Dr. Leighty attended school there, studied at Kent University in Ohio, and was awarded his doctor's degree in veterinary medicine from OSU. After entering practice, he joined USDA in 1958 as a veterinary poultry inspector at Worthington, Minn., and was assigned as Inspector-in-Charge at Wells, Minn. Later, he was promoted to Supervisory Inspector at Faribault, Minn.

In April 1962, Dr. Leighty was appointed training officer on the staff of the Poultry Inspection Branch in Washington. Later he headed the poultry branch's Pathology Section at the Agricultural Research Center, Beltsville, Md., and the Laboratory Section of the Poultry Inspection Branch.

Consumer protective services are one of the activities of USDA's Consumer and Marketing Service. The deputy administrator for Consumers Protection and his assistant direct programs which aid consumers by providing inspection for wholesomeness of all meat and poultry moving in interstate commerce.

1961

Six scientists have been selected to receive $1000 each, as travel grants for use in connection with the 13th World's Poultry Congress.

Names of the travel award winners were announced in Chicago by Dr. A. William Jasper, chairman, U. S. participation committee for the congress. Money for the grants, Dr. Jasper said, came from 5 different organizations.

Dr. K. M. Kerr was the recipient of Dr. Salsbury's Laboratories grant and has recently completed his master's degree in microbiology.

At this early stage in his career, he already has a number of scientific publications to his credit. Many of these deal with his research studies in infectious synovitis in poultry. He has just been appointed instructor in veterinary pathology at Texas A & M.

1963

Dr. Larry L. Stackhouse recently joined the research staff as clinical veterinarian for laboratory animals in the department of pathology and toxicology at Pitman-Moore Division of The Dow Chemical Company.

Dr. Stackhouse formerly was director of veterinarian medical laboratory in the U.S. Army Veterinary Corps. His activities with Pitman-Moore will be in clinical toxicology, experimental surgery, and the care and health of the laboratory animal colony.
The winter quarter activities at Alpha Psi began with a rush. Most of us had hardly caught up with the holiday season when classes were once more upon us.

On January 16, 1966, the pledge class of the 1965-66 year was formally initiated. Dr. Savoy, director of the Columbus Zoo, gave an excellent and informative address following the banquet. We would like to take this opportunity to introduce the new members to you and again extend our welcome to them in the fun and fellowship of Alpha Psi membership. The new members are:

John Anderson
Herb Betts
Larry Blum
Neal Caldwell
Mike Cochran
Mike Cornwell
Stan Eichelberger
Jim Ewing
Jay Forsyth
Jerry Haughn
Ken Holec
Theron Hysell
Bruce McCullough
Bob Nelson
Michael Snyder
Richard Smolen
Steve Solomon

Roger Spiess
Bob Temple
Mark Weaver
Gary Wiedwald
John Wilson
Bernice Younkman

The pledge class, as their project this year, installed railings across the front porch and down the steps. A fine job men, and thanks. Arrangements now have been made to install two yard lights in front of the house. The light they will give should take the shadows away from the steps. These two items add a great deal to the safety and beauty of the house.

The membership held a dance on January 29 at the White House. The band was loud, fast and great, and everyone had a good time.

Sunday, Feb. 6, saw the opening of the Ohio Veterinary Medical Association convention here in Columbus. The 110 Club of Alpha Psi sponsored a luncheon that day. The function was well attended by alumni members.

As we go to press there is one more function coming this quarter — the Alpha Psi wives' annual spaghetti dinner. It will be held at the house on February 19. If past years are any indication, the girls should have a great meal for us that night.

Don't forget the Senior Sendoff this year. The date is set for May 28 at the Jai Lai. Tommy Spafford will be providing the music. The Alumni are cordially invited to attend.

(Cont. from page 33)

node enlargements and decide to take some blood for a hemogram. You tell Bob you'll call him as soon as you get the results of the blood test. Laboratory findings include: RBC-9 mil cu. mm., Hb- 12 Gm/100 ml., WBC- 6,000/cm. mm., Lepto-neg.

Doctor, list the respiratory diseases you would consider in your differential diagnosis, your final diagnosis, and whether you would expect any abortions in the mares.

A REVIEW OF ANTIMICROBIAL THERAPY
April 27, 1966. Limited to: 30. Presented by: Dr. Thomas E. Powers, Department of Veterinary Physiology and Pharmacology and Dr. C. M. Stave, Department of Veterinary Physiology, and Pharmacology, University of Minnesota.

Registration Fee: $20.00 (Early advance registration requested with 50 per cent deposit).

ENDOCRINE MEDICINE IN SMALL ANIMALS
April 13-14, 1966 Limited to: Unlimited Presented by: Dr. W. G. Venzke, Department of Veterinary Anatomy, and Dr. E. F. Donovan, Department of Veterinary Medicine.

Registration Fee: $30.00 (Early advance registration is requested with 50 per cent deposit).

For further details on any of these programs, contact Dr. John Helwig, Director, Sisson Hall, O.S.U. Application forms and room reservations may also be obtained from his office.

Radio Education for Veterinarians

The Education Committee of the Ohio Veterinary Medical Association has established a statewide Radio Veterinary Medical Education Network which is already in progress. It will feature outstanding veterinarians from all over the country speaking on a wide field of topics. The 15 minute programs will be broadcast bimonthly.

Below is a list of the stations participating and the schedules for each. If your local station is not participating contact the O.V.M.A. for information on how to secure their broadcasting cooperation.

**Station**
- Cleveland — WERE — 98.5 FM
- Hillsboro — WSRW — 106.7 FM
- Mt. Vernon — WMVO — 93.7 FM
- Lima — WIMA — 102.1 FM
- Gallipolis — WJEH — 101.5 FM
- Columbus — WOSU — 89.7 FM
- Cambridge — WILE — 96.7 FM

**Schedule**
- 2nd and 4th Wednesday — 1200 Noon
- 1st and 3rd Thursday — 11:30 A.M.
- 2nd and 4th Wednesday — 6:30 P.M.
- 2nd and 4th Monday — 12:15 P.M.
- 1st and 3rd Wednesday — 7:00 P.M.
- 2nd and 4th Friday — 11:45 A.M.
- 2nd and 4th Tuesday — 12:30 P.M.
EDITOR'S NOTE . . .

As Dean Krill has informed the majority of Speculum readers it has become necessary to place our publication on a subscription basis of $2/year. Due to the increased costs of production and the decreased number of available veterinary advertisers, we feel that this is the only way we may continue publishing The Speculum.

We sincerely thank those alumni who have already indicated their loyalty and wish to urge all others to send in their subscriptions by return mail. Checks should be made payable to The Speculum, and subscriptions may be obtained for more than one year.

By placing The Speculum on a solid financial basis, we will be able to offer a more interesting and attractive publication to our readers. As always, we encourage manuscripts from our readers although we reserve the right of editorship.

Please include items of interest for “Alumni News” with your subscription check. We welcome your comments and suggestions to improve our publication. Barbara Stein, Editor

PROGRESS REPORT ON THE RACE LAB

BY ROBERT FRITZ, VET. MED. III

The mobile race lab has continued to make headway in its research project to develop pre-race drug tests.

In order to further evaluate testing techniques while simulating race track conditions, a 16 stall barn with adjoining training track has been constructed east of the Veterinary Clinic. There will be both Standardbreds and Thoroughbreds occupying the barn. These horses will receive daily training and will be tested prior to and after these training sessions.

The most recently acquired member of the research team is Mr. James Nonnan. Continuing reports will appear in THE SPECULUM.
THEY SERVED US WELL

Ronald M. Gow (OSU'09), 78, Denver, Colo., died Oct. 28, 1965.

Dr. Gow had served as state veterinarian in Colorado for 25 years, from 1933 to 1949, and as veterinarian at the Denver stockyards for many years. He also filled a part-time position on the State Board of Stock Inspection Commissioners and Livestock Sanitary Commission of Colorado for 16 years. Prior to moving to Colorado in 1920, Dr. Gow was state veterinarian in Arkansas. He had been a member of the AVMA more than 50 years.

Lynn K. Knighton (OSU'11), 81, Escondido Calif., died November 26, 1965.

Dr. Knighton had been a member of the AVMA for more than 35 years. He was retired.

Albert C. Morrow (OSU'11), 77, San Benito, Texas, died October 31, 1965.

Following practices in Kentucky, Big Timber and Wisdom, Montana, Dr. Morrow established a practice in Dillon in 1911. In 1921 he was named deputy state veterinarian for a seven-county area in southwestern Montana. He also spent several periods as acting state veterinarian. In 1942, he moved to California. Prior to retirement in 1955, he served in the U.S. Government meat inspection service.


Dr. Paden had practiced in Carteret County for the past 18 years. He had worked for the federal government before establishing a private practice.

Ohio has been declared a modified certified free area with only 96 herds under brucellosis quarantine as of January 1, 1966. Five years ago over a thousand herds were quarantined because of brucellosis.

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