VETERINARY MEDICAL REVIEW

College of Veterinary Medicine — University of Missouri-Columbia

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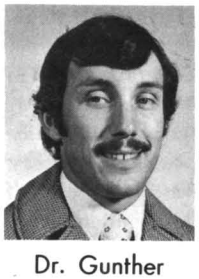
Three New Faculty Appointed by College

Three appointments to the College of Veterinary Medicine have been announced. Dr. Edward Breitschwerdt has been appointed as an intern in veterinary medicine-surgery, Dr. John Gunther is a resident in veterinary medicine and surgery and Dr. Charles A. Blackwell is a research associate in veterinary pathology.

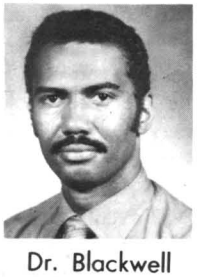
Dr. Breitschwerdt recently received a D.V.M. from the University of Georgia and also has a B.S. in animal science from the University of Maryland.

Dr. Gunther received a D.V.M. from Purdue University and has been with the U.S. Air Force the past two years in Greenland. He was previously in practice in Frankfort, Ind.

Dr. Breitschwerdt



Dr. Gunther



Dr. Blackwell

Dr. Blackwell received a D.V.M. from Tuskegee Institute and has been a post doctoral fellow at UMC the past two years. He will continue as a research specialist at the Sinclair Research Farm in addition to his duties as a research associate in veterinary pathology.

Dr. Bierschwal Named To Receive Lectureship

Dr. C. J. Bierschwal, professor of veterinary medicine and surgery, has been named recipient of a Fulbright-Hays Lectureship in veterinary science. During December and January, he will be working with the School of Veterinary Sciences, University of the Republic, Montevideo, Uruguay, in the field of cattle reproduction.

He will consult with the faculty of the School in the revision of the teaching program and in the evaluation of the research programs in cattle reproduction. This will include methods used to determine grades of fertility, the methods of diagnosis of microbial and parasitic disease of the genital system and the study of the influence

of several factors such as food, genetic factors, etc., on the reproduction of cattle. He will spend part of the time visiting cattle-breeding ranches in the area.

Dr. Bierschwal is nationally-recognized for his work in veterinary obstetrics and gynecology and in teaching. He has been selected to receive the Norden Distinguished Teaching Award twice, in 1967 and 1971, by the students in veterinary medicine. He was also chosen to receive recognition as a Distinguished Faculty Member by the University Alumni Association.

He received a D.V.M. from Iowa State University and an M.S. from the University of Missouri. He was in private practice in Excelsior Springs for a short time before coming to the University in 1951.

While on sabbatical leave in 1968-69, he was teaching and conducting research at the Veterinary Obstetrics Gynecology Clinic at the University of Utrecht, The Netherlands (Holland).

Breeding Soundness Conference Planned

The American Veterinary Society for the Study of Breeding Soundness will hold its annual meeting on Sept. 6-7 in the Livestock Pavillion on the UMC campus.

Speakers and topics include Dr. C. H. W. deBois from Utrecht, The Netherlands, who will present "Diagnosis and Treatment of Equine Infertility in the Mare," and "Canine Reproductive Problems and Research"; Dr. L. Ball (Col. State U.), "A New Look at Semen Collection and Evaluation of Bulls for Breeding Soundness"; Dr. D. Carnahan (KSU), "Mineral Metabolism Relationship to Reproduction in Dry Lot Dairy Operations"; Dr. B. Day (UMC), "Embryo Transplant and Controlled Parturition in Swine"; Dr. J. Hughes (Calif. U), "Rectal Palpation—Its Accuracy in Clinical Diagnosis"; Dr. D. Lamond (Syntex Corp), "Ovulation and Synchronization Problems in Embryo Transplants"; Dr. W. McDowell (UMC), "Review of MMA in Swine and Methods of

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Pathologist Studies Diseases of Rare White Tigers

The white tiger is a rare, beautiful animal. Distinctive for its eggshell coat, black stripes and ice-blue eyes, the white tiger is a true aristocrat of the animal world. The two living adult white tigers in the U.S. are the main attraction in the Washington National Zoological Park. Three cubs were recently born to one of them. Two others born in the U.S. died at a young age.

A University of Missouri pathologist is interested in why these two died and what might be done to prevent the loss of still more.

Dr. H. H. Berrier, associate professor of veterinary pathology at the Diagnostic Laboratory, became interested in the white tiger in 1961 when he read an article in the National Geographic Magazine by Dr. Theodore Reed, a veterinary school classmate at Kansas State University in the 1940's. As Director of the Smithsonian's National Zoological Park, Dr. Reed told of his journey to India where he selected a white tiger for the Zoo from a small family raised in the harem quarters of a deserted palace in the district of Rewa, India.

A rare genetic occurrence, only nine white tigers had been seen in some fifty years. The ninth, a cub, was captured in 1951 and named Mohan. When mature he was mated with a normal-colored female. They produced ten cubs. While all were normal in color because the gene for a yellow coat was still dominant, these tigers carried the white gene passed on to them by their father.

Mohan was then mated with one of his normal-colored daughters and in 1958 they produced four white cubs, from which the U.S. white tiger was chosen.

The name suggested by the Maharaja of Rewa was "Mohini" which means one capable of enchanting. From then she has been called Mohini—"Enchantress"—a fitting name for the regal queen of the Zoological Park.

When Dr. Berrier was in Washington the next summer after her arrival, Dr. Reed asked him if he would do an oil painting of their new acquisition for his office in the Zoo. Dr. Berrier relates that on completion, he took the painting with him when he was invited to dinner at the Reeds' home. It remains there today, clearly a prized possession.

Mohini was mated with one of the original ten yellow tigers born to Mohan, founder of the clan. Again, Mohini and the yellow male carried the gene for the white coat passed on to both of them by their father. They produced two yellow cubs and one white one in the first litter in 1963.

Dr. Berrier's oil painting of Mohini hangs in the home of Dr. Theodore Reed, Director of the Smithsonian's National Zoological Park.

At 19 months the white cub, Rajkumar, died too, much to the dismay of Dr. Reed and zoo officials. All indications pointed to an infectious disease commonly known as distemper although the cub had been vaccinated.

At the time, Dr. Berrier suspected the cub might have a condition known as Chediak-Higashi Syndrome but blood samples at three months of age proved negative as had blood samples of the mother, Mohini, at the time of her arrival in this country.

Chediak-Higashi Syndrome is a genetically inherited disease associated with albinos or partial albinos in several species of animals and in humans. It has been reported in Aleutian Island blue mink and in a herd of cattle, both at Washington State University; a strain of white mice at the Jackson Labs, Bar Harbor, Me.; in the American bison and in a killer whale in captivity.

Among humans and animals, about ⅓ of those with the disease die in early childhood. In the U.S. there have been only 16 human cases reported since the disease was discovered in 1942 but in other areas of the world there is a much higher incidence—Cuba, Japan, Africa and Europe.

While the cause of death may be due to a variety of reasons, Chediak-Higashi prevents the body from using protective defenses against infection and renders inoculations ineffective, thus, in part, explaining the mysterious death of the cub that had been inoculated against distemper.

Four years ago, Dr. Berrier, a colonel in the Air Force Reserve Veterinary Corps, was serving a two-week tour on active duty at the Armed Forces Institute of Pathology (AFIP). He decided to investigate the death of the cub and pulled its microscopic slides from the files. Using kidney tissue and a special stain he was able to detect inclusion bodies in the tissue indicating a parallel with Chediak-Higashi Syndrome. Last summer, during another two-week tour of active duty at the AFIP, he asked to work on the white tiger case.

In the meantime, Mohini had produced another litter of three yellow and two white cubs in 1970. Only one white male sur-

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Microbiologists Study Diseases of Cattle

Two research projects in the College of Veterinary Medicine have received grants from the Research Service of the U.S. Department of Agriculture. Both projects deal with diseases affecting the cattle industry.

Dr. John Berg, assistant professor of veterinary microbiology, received $30,000 to continue study of "Foot Rot in Cattle." This disease is the major cause of foot lameness in cattle and is characterized by inflammation of the interdigital tissues of the foot and severe lameness. By studying the immunologic response of the animal to the disease, the researchers hope to determine the feasibility of developing a vaccine for its prevention.

Dr. Bruce Rosenquist, professor of veterinary microbiology, is directing a project which has received $20,000 to study "The Host Response in Bovine Respiratory Disease." This disease is responsible for economic losses due to the death of cattle that exceed $100,000,000 per year in the U.S. Cattle that do recover suffer from poor growth and retarded weight gain. Researchers hope to develop methods for prevention and treatment of the disease.

Dr. Buening Receives Three Research Grants

A researcher in the College of Veterinary Medicine has received three grants to help continue his research efforts. Dr. Gerald Buening, associate professor of veterinary microbiology, received $3,758 from the Morris Animal Foundation and the Tarrant County Veterinary Medical Association, Denver, for "The Role of Cell-Mediated Immunity in Clinical Canine Demodicosis." Canine demodicosis is a type of mange caused by a parasite. Dr. George G. Doering, associate professor veterinary medicine and surgery, is co-investigator of the project.

Another grant from the Research Corporation of New York for $1,644 will be used for "Cell Mediated Immunity in E. Tennella Infection in the Fowl." Under the direction of Dr. Buening and Dr. Raymond J. Visco, this project will attempt to demonstrate the role of cell medi-

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Five Faculty Visit Other Countries

Five members of the College of Veterinary Medicine faculty have recently attended and participated in meetings located in foreign countries.

Dr. George G. Doering, associate professor in veterinary medicine-surgery, recently returned from Maracay, Venezuela—70 miles west of Caracas—where he presented papers on small animal dermatology to the College of Medical Veterinarians of the State of Aragua, Venezuela, held at the University of Maracay, July 10-14.

Invited to speak on veterinary dermatology, Dr. Doering and Dr. Robert Knowles, a practitioner from Miami, were the only speakers from the United States at the College's First Conference of Clinical Medicine and Surgery of Small Animals.

Dr. Doering presented papers three afternoons—using an English-Spanish translator. The Conference participants consisted of around 40 Venezuelan practitioners and faculty from Maracay, Maricaibo, and Barquismento, Venezuela. The College of Medical Veterinarians of the State of Aragua presented Dr. Doering with a silver plaque in appreciation of his programs.

Dr. Hans K. Adldinger, associate professor of veterinary microbiology, visited with microbiologists of the University of Munich and Erlangen, West Germany. He presented a paper, "Latent Herpes Virus Infections of Poultry" at the Department of Clinical Virology, University of Erlangen on July 9.

Dr. H. E. Jensen, associate professor of veterinary medicine-surgery; served as vice chairman of the section of Ophthalmology at the XXth World Congress of Veterinary Medicine in Thessaloniki, Greece, on July 6-12.

Dr. James E. Breazile, professor of veterinary anatomy-physiology, attended the Second Meeting of International Commission on Avian Anatomical Nomenclature in Liverpool, England, on July 8. He presented a paper entitled: "Nomenclature of the Central Nervous System of Birds."

Dr. H. -D. Dellmann, professor of veterinary anatomy-physiology, was in France and England during June and July to confer with colleagues on neuroendocrine research projects that are being conducted cooperatively. He visited with the faculty of the Department of Physiology, Université Louis Pasteur, Strasbourg, France; the Departments of Anatomy and Parasitology, Veterinary Medical School in Paris; the Department of Chemical Pathology, St. Bartholomew's Hospital in London and the Department of Experimental Pathology at Charing Cross Hospital Medical School, also in London. A new project is being started this fall with scientists in Strasbourg, France, and Omaha, Neb., on "Pars Intermedia Rostral Zone and ACTH Secretion." Dr. Dellmann has received a grant for $26,354 from the Public Health Service for the project.

Pathologist Directs Colon Cancer Study

Cancer of the colon is one of the diseases being studied by a pathologist in the College of Veterinary Medicine, Dr. Robert Wilson. With a grant from the National Livestock and Meat Board for $4,000, he is studying the effect of diets containing animal or plant fats on rats in which cancer of the colon has been chemically induced. Different amounts of animal and plant fats will be fed with a bulk diet to four groups of rats to determine which group develops tumors, the number of tumors and when they appear.

This project, using animal models, will help scientists determine the role of diet in cancer of the colon. In man, the disease is found primarily in developed countries and is associated with relatively high intake of fat, protein and sugar as opposed to countries where the diet consists mainly of whole grain cereals, fresh fruits and vegetables.

While research has been done in this area, much of the data is from human feeding trials which suggest a correlation between colon cancer and meat and animal fat. The evidence, however, is incomplete and tenuous as to a direct causal relationship between the two. Research with animal models will help to supply more information in this area.

White Tiger

vived. Named Moni, he was to tour the U.S. to raise money to help preserve the wild tigers of India and other parts of the world which seemed to be doomed to extinction without help. Before the tour could begin, Moni died of shock at the age of sixteen months. As with the mother and the first white cub, no signs of Chediak-Higashi were found in earlier blood samples.

With tissue from two white tigers, Dr. Berrier was able to make a more thorough study of tissue from the body such as the liver, kidney and eye, and to compare these with tissue from a normal yellow tiger. Inclusion bodies were found which very closely parallel Chediak-Higashi in both cubs. Other animal species with Chediak-Higashi Syndrome and humans exhibit the trait in white blood cells, however, this has not been found in the white tiger.

Dr. Berrier thinks there is sufficient evidence of a disease enigma in the white tiger blood line that a complete scientific investigation should be made. "If C-HS or some other disease does indeed exist in these tigers, perhaps a colony of these tigers could be established for further study of the condition in man and other animals."

At this time, Mohini has only one direct living white offspring, Rewati, born in 1969. She has lived beyond the crucial age when this disease enigma is a real threat.

It is suspected that other descendants of Mohan have also been struck by this disease enigma since about 45%, or 40 of 89 tigers of both colors carrying the white gene died before reaching their normal life expectancy. This is above the death rate of ⅓ observed with Chediak-Higashi Syndrome.

Dr. Berrier seems to have found a crucial piece of the puzzle—but the puzzle isn't finished yet. No tissue is available from those tigers who have died in India or from the pair of tigers and their offspring in England. Further investigation should be made, Dr. Berrier feels, which would benefit the continuation of this family of white tigers and possibly other species, and perhaps even humans.

Buening Grants

ated immune systems in resistance to a parasite in fowl. It is of economic importance to the poultry industry but is also important because of the close taxonomic relationship to Toxoplasma gondi, a parasite which causes toxoplasmosis, a disease of public health significance.

A $500 grant from Ft. Dodge Laboratory will be used to study "Anaplasmosis," a disease which produces a severe anemia in cattle by damaging the red blood cells.

Breeding Conference

Control"; Dr. W. Parker (Am. Breeder Service Corp), "Equine Artificial Insemination—Frozen Semen vs. Fresh Diluted"; Dr. D. Schultz (International Cryo-Biological Services, Inc.), "Embryo Transfer Techniques and Problems"; Dr. G. Sidel (Col. State U.), "Embryo Collection and Storage Techniques and Problems"; Dr. R. Youngquist (UMC), Applied Reproductive Physiology of the Beef Cow."

Dr. C. J. Bierschwal (UMC) is the program chairman. The meeting is co-sponsored by the American Veterinary Society for the Study of Breeding Soundness, the American College of Theriogenology, the College of Veterinary Medicine and UMC Extension Division, University of Missouri-Columbia.

Faculty Notes

Dr. Kenneth D. Weide, dean of the College of Veterinary Medicine, and *Dr. E. A. Corley,* associate dean, attended dedication ceremonies for the new veterinary hospital at Ohio State University on June 7-8.

Dr. Gary Osweiler, associate professor of veterinary anatomy-physiology, presented a paper entitled "Animal Health Problems Relating to Water Contamination" to the Nebraska Medical Association in Norfolk, Neb. on June 10-11.

Seven faculty members of the Diagnostic Laboratory attended the North Central Conference of Veterinary Laboratory Diagnosticians in Champaign, Ill. on June 11-14. *Dr. L. G. Morehouse,* professor of veterinary pathology, served as site visitor for the American Association of Veterinary Laboratory Diagnosticians for accreditation application of the Illinois Veterinary Diagnostic Laboratories. *Dr. L. D. Kintner,* professor of veterinary pathology; *Dr. S. L. Nelson,* associate professor of veterinary pathology; *Dr. R. R. F. Solorzano,* associate professor of veterinary microbiology; *Mr. Bruce Addison; Dr. E. M. McCune,* associate professor of veterinary microbiology; and *Dr. D. A. Schmidt,* professor of veterinary pathology, attended. *Dr. E. M. McCune,* and *Dr. R. F.* Solorzano also attended the North Central Poultry Disease Conference at Urbana, Ill. on June 13. Dr. McCune presented a paper entitled "Field Observations of Colibacillosis in Turkeys."

Dr. Olen R. Brown, associate professor of veterinary microbiology, attended NASA symposium on Extreme Environments at the Ames Research Center, Moffettfield, Calif. on June 26-28.

College of Veterinary Medicine

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