

The HORSEREPORT

Volume 19, Number 4, October 2001

Dedicated to the health, well-being, performance, and veterinary care of horses through research and education.

School of Veterinary Medicine

Every individual who has been charged with the care and maintenance of draft horses is familiar with the chronic dermatitis that plagues the pastern areas of their charges. Traditionally known as scratches, grease heel or cracked heels, this condition is the bane of existence for horsemen who need to keep their horses in fit and working condition. It is a localized skin condition that never seems to go away despite constant care and the application of a wide array of medicants, potions and topical therapies.

While this condition is widely evident throughout the horse industry, it is within the Shire and Clydesdale breeds that it manifests itself in its most severe and debilitating form. The disease processes start at an early age, progress throughout the life of the horse and often ends in disfigurement and disability. It first appears as small, well-demarcated, multiple ulcerations of the skin at the rear of the pastern in any one or all of the four legs. These ulcerations are covered with crusty



Stanley House Aristocrat. Image courtesy Ayrshire Farms.

Pastern Dermatitis in Shires and Clydesdales

by Dr. Gregory L. Ferraro

exudative material and often bleed, especially during exercise and work. These small sores may seem to respond initially to treatment with topical medications but often reverse course, only to progress in severity and multiply in number. These multiple lesions often will coalesce into larger and more intractable areas of skin ulceration. They then become chronically infected, produce copious amounts of foul-smelling exudate and chronic thickening of the affected areas of skin. Over time, these lesions spread up the leg, often

Continued on page 3

IN THIS ISSUE...

Skin problems; profiles: Dr. Affolter, Dr. White; Wilson Award; Gregson Fellowship; Batonnier dies; West Nile fever info; donors: Celebrate the Champions, Dollars for Davis



DIRECTOR'S MESSAGE

In Pursuit of Answers



Dr. Gregory L. Ferraro

The cover story of this *Horse Report* demonstrates two often overlooked factors that result in the advancement of veterinary medical research. The first is that often, the persistent questioning and dogged pursuit of answers by animal owners forces the medical establishment to re-evaluate long-held and widely accepted opinions regarding specific medical conditions. This re-evaluation process can result in dramatic changes in the medical paradigm of a specific disease. Secondly, after a more critical evaluation, medical conditions or disease processes which have been assumed to be rather straight forward and uncomplicated, can often turn out to be



"The Horse Fair" by Rosa Bonheur (1853)

some of the most complicated of medical mysteries.

Pastern dermatitis in draft horses, particularly Shires and Clydesdales, has been a long-standing and often frustrating problem for those horsemen who raise and care for them. People have always assumed that the condition was just a more serious manifestation of the "cracked heel" or "grease heel" problem that all horsemen experience from time to time. Veterinarians have rather routinely dismissed the problem as a minor condition of the skin that results from either bacterial infection or choriopitic mange or both. Recommendations for treatment have varied all

"Often, the persistent questioning and dogged pursuit of answers by animal owners forces the medical establishment to re-evaluate long-held and widely accepted opinions regarding specific medical conditions."

over the map, but none have satisfactorily controlled the problem in these large breeds of horses.

It was an owner of Shires, Ms. Sandy Lerner of Ayrshire Farm in Virginia, who decided that the pat

answers and long-held assumptions of horsemen and veterinarians alike were no longer acceptable. She decided that this was not just "glorified grease heel;" the problem in these big fellows was more than one just requiring a prescription for the latest topical

ointment. She decided to be persistent in her quest for an adequate definition of this problem until she could get someone to act. In 1999, she contacted scientists at the UC Davis Center for Equine Health. Through her constant prodding and dogged pursuit of the matter, she convinced us to travel across the country to take an "in depth" look at the problem. What we found was a real surprise.

Preliminary investigations conducted under the direction of Dr. Verena Affolter have uncovered some rather startling results. Pastern dermatitis in draft horses probably is not a primary dermatitis at all, but rather a vasculitis (inflammation of the vessels) resulting from immune-mediated causes that may be influenced by genetic predispositions. In other words, what was assumed for years to be one thing, turns out to be another, and on top of that, it has the potential to be one of the most

complicated and more interesting of medical conditions we have investigated. These initial small studies, instigated and supported by Ms. Lerner, now have led us to the doorstep of some important work.

The Center for Equine Health is currently in the process of organizing a research team, comprised of investigators with widely ranging medical skills, to design and implement a long-term research plan that, we hope, will lead to the unraveling of this medical mystery. It may prove to be one of the biggest challenges we have yet to face, but we are determined to be as dedicated and persistent in our efforts as Ms. Lerner was in seeking help for her beloved Shires.



Dermatitis

Continued from page 1

affecting the skin as high as the knee and/or hock joints. These lesions are, at the very least, irritating and



The shaved leg of a draft horse with pastern dermatitis showing chronic irritation and thickened skin up the leg.

bothersome to the horses and, at times, can be quite painful. Severely affected individuals often exhibit generalized swelling in all four legs. In older, chronically affected horses, this enlargement of the lower limbs becomes permanent and is accompanied by thickened skin folds and the formation of large, well defined, hard nodules (called "grapes" by previous generations of horsemen). These nodules can become quite large, often "golf ball" or even "baseball" in size. The nodules themselves then become a mechanical problem because they interfere with free movement and are often injured or damaged during work.

Horsemen and veterinarians have been arguing over the cause and possible treatments for this condition for decades. Everything

from mange mites to bacteria, fungi and chemical or plant irritants has been implicated as possible causes.

Even the horse's own hair, the luxuriant "feathers" that descend over the lower leg and pastern, have been blamed because it holds moisture and thereby provides the warm and wet environment on the skin surface which enhances the growth of fungi and bacteria. In recent years, some veterinarians have felt that the condition was somehow related to a photosensitivity problem because the lesions were most evident on white legs. (In fact, they are also prevalent on dark limbs, just harder to see, especially in those horses with well-

grown feathers.)

In the late 1980s, a Dr. Tony Stannard of the UC Davis School of Veterinary Medicine made some preliminary microscopic analyses of the diseased areas of skin and classified what he saw as "Pastern Leukocytoclastic Vasculitis." This rather long and complicated sounding moniker was meant to denote that the condition was caused by degenerative

changes in the small microscopic blood vessels of the affected skin. His work provided the first indication that the common grease heel of draft horses might, in fact, be a definable disease entity. Unfortunately, his research in this area was cut short by his untimely death.

Recently, because of the interest, cooperation and financial support from Ayrshire Farms of Upperville, Virginia, scientists at the UC Davis Center for Equine Health have again taken up this work. The research team, led by Dr. Verena Affolter, has catalogued and followed the progression of the lesions, biopsied them, analyzed the harvested tissues microscopically and subjected them to various equine antigens. These investigators have confirmed what Dr. Stannard suspected; that the degeneration of the vasculature has an immune-mediated component which is central to the production of disease. While the work is neither complete nor conclusive as to the cause and effect of the disease, the research so



Pastern dermatitis showing skin ulceration and crusty drainage.

far indicates that much of the damage caused to the skin and subcutaneous tissues of the lower

Continued on next page

Dermatitis

Continued from previous page

leg and pastern may be a result of the horse's own immune response to an inciting irritant.

In other words, the initial agent which attacks the skin is not important. A type of bacteria, fungus, or mange mites afflicts the horse's skin which initiates a hyperactive or misdirected response by the horse's own defense mechanisms. The animal's own immune system then becomes the actual perpetuating cause of the problem. This "hyper" reaction by the body persists long after the original irritant (mite, bacteria, etc.) is gone which partially explains why the list of failed treatments is so long. Whatever particular treatment one employs, it may eliminate the particular pathogen present, but once that one is eliminated, another which is not susceptible to the medication chosen takes over because the

horse's skin is too busy fighting with itself to defend against any new invaders.

So the pastern dermatitis which has forever plagued the draft horse enthusiast is not, in fact, a simple infection by some single identifiable and easily eliminated microbial agent, but rather the manifestation of an extremely complex immune-mediated disease phenomenon. These types of medical mysteries are difficult to unravel; indeed, the UC Davis researchers expect the ultimate solution will take years to define.

In summary, let it be re-emphasized, that the skin lesions we see on the pasterns of Shires, Clydesdales and perhaps other breeds of working horses are not isolated infections or skin abrasions, but the result of a very complicated and, as yet, ill-defined immune-

mediated systemic disease. While veterinary medical scientists are working hard to better understand this disease, a cure is a long way off. Control is possible through the implementation of a diligent, daily program of cleanliness and decontamination. It must be fully understood that one who contemplates imbibing in the pleasure and enjoyment derived through the use and ownership of heavy horses, must also be willing to assume the sometimes burdensome responsibility for the proper care and maintenance of these "most noble" of steeds.

For more information or to donate any horses to this project, please contact Dr. Gregory Ferraro at (530) 752-6433 or via e-mail at glferraro@ucdavis.edu.



PROFILE

Dr. Verena K. Affolter



Dr. Affolter is a lecturer in dermapathology for the UC Davis School of Veterinary Medicine's Department of Pathology, Microbiology, and Immunology. Originally from Switzerland, Dr. Affolter came to the UC Davis School of Veterinary Medicine as a visiting scholar in 1992 from the University of Berne in Switzerland on a fellowship by the Swiss National Foundation. She stayed at UC Davis to pursue a Ph.D. which she obtained in 1999. She is also a Diplomat with the ECVP (European College of Veterinary Pathologists).

Dr. Affolter's research interest focuses on skin diseases in horses, dogs and cats. She also specializes in immunology research, especially the immunological side of skin

diseases. She finds skin diseases especially interesting because of the necessary interaction between pathologists and clinicians. This interaction is vital for the proper diagnosis of skin diseases and she enjoys the merging of research and clinical science. She also said this is a relatively new field that offers many challenges and opportunities for new discoveries.

She is enjoying her faculty position at UC Davis because of the opportunity to teach, conduct research and clinically diagnose skin problems. "Only at UC Davis, in an academic environment, would I be allowed to pursue all three of these at the same time," she said.

DONOR SUPPORT

Celebrate the Champions

The fifth annual "Celebrate the Champions at Del Mar" fundraiser July 21, 2001 was another stunning success. Net proceeds reached just over \$330,000 and will benefit the UC Davis Center for Equine Health (CEH).

"We are thrilled with the racing community's

support for this event," said CEH Director Dr. Gregory Ferraro. "The proceeds raised will help us continue our research to ensure the health and well-being of all horses."

Special thanks to all the people who attended this year's "Celebrate the Champions at Del Mar."

George N. & Grania Allport
AT & T
AT & T Wireless
Bob Baffert
Dr. & Mrs. Robert Baker
Bernice Barbour Foundation, Inc.
Daniel & Catherine Barry
Bay Meadows Operating Co.
Ben & E. Joan Bear
David Bienstock
Gary & Frances Biszantz
Stewart Bowie
Ethan & Laura Boyer
Linda Starkman Burke
Bing Bush
Cal Poly Pomona Foundation, Inc.
California Thoroughbred Breeders
Association
California Thoroughbred Breeders
Foundation
Campbell Mithun
Theora Cole
Nicholas & Kathleen Connor
Tim & Charleen Conway
Harry & Valerie Cooper
Michael & Melanie Cooper
David C. Copley
Sid & Jenny Craig
Richard W. Craigo
John H. Deeter
Del Mar Regional Chamber of
Commerce
Del Mar Thoroughbred Club
Cecil B. deMille Foundation
Paul & Louise Di Amico (Louise B.
San Chez Mobile Home)
Dr. Jessica A. Dugan
Keith Edwards
Richard & Barbara Enberg
Equibase Company, L.L.C.
Michael & Melissa Ernst
Marilyn Fletcher
Dr. David E. Fly

Geraldine C. Forrester
Fort Dodge Animal Health
Craig R. Fravel
Don Freeberg
Mr. & Mrs. Edwin Friendly
Mr. & Mrs. Michael Gleason
Joe A. Gonsalves & Son
Dolly Green Research Foundation
Gail Gregson
John & Carol Harris
Judith Harris & Robert Singer
Robert F. Hendrickson
Heska Corporation
Tim Heuer
Hollywood Park Racing Charities, Inc.
Mark Howington
HydroSurge, Inc.
John & Karen Jaczko
Dr. & Mrs. Ronald Jensen
Doris Johnson
Aaron & Marie Jones
Keeneland
Jon & Sarah Kelly
Charles R. Kenis
KPMG
Parvin & Linda Laird
Lease Max Inc.
Robert & Beverly Lewis
Los Angeles Turf Club, Inc., Santa
Anita Park
Lusardi Construction Co.
John & Betty Mabee
Richard & Randi Mandella
Trudy McCaffery
Merial Limited
MGM Mirage
Lisa Miller
Irwin A. Molasky
Michael J. Moore
Dee and Babs Moossa
Marie Moretti & Terry McGann
Moss Foundation
James & Claudia Munak

Connie Nelson
Oak Tree Charitable Foundation
Oak Tree Racing Association
Dr. & Mrs. Timothy O'Brien
ODS Technologies, LP
(dba TV Games)
Gerald & Robin Parsky
Madeleine E. Paulson
Harriet E. Pflieger Foundation
Ron & Reggie Phillips
Platinum Performance, Inc.
Mr. & Mrs. Ken Poslosky
(La Poz Stables)
Kjell H. Qvale
Ridgely Revocable Trust
River Edge Farm, Inc.
Roel Construction Co., Inc.
Lewis & Cathy Rotunno
Jenine Sahadi Racing Stable
James D. Schmidt
Howard Schwartz & Elayne
Garofolo
Ralph & Barbara Scurfield
Donald & Diane Sherman
Peter & Claudia Sherman
Mace & Jan Siegel
Dr. & Mrs. Michael Sigband
Eric Singer & Erica Woods
Maria Helen Smith
SueAnne Summers
Surfside Race Place at Del Mar
(22nd District Agricultural
Association)
John Toffan
Mr. & Mrs. Robert Tourtelot
Tres Palomas
University Ventures Network
USE Credit Union
Viejas Casino House
Dr. & Mrs. Steven Wickler
Marcia L. Williams
Andrew & Hazel Wolf
Marty & Pamela Wygod
(Synetic Foundation, Inc.)

Equine Skin: the Vital Protective Layer

The shining glistening coat of a horse in good health is the image artists love to capture on paper and canvas. The way the light reflects a myriad of colors from the slick, silky hair...it can be literally stunning, and one can't help but want to touch that sleek coat. But when there's a problem with the skin, it can be heartbreaking to watch the once shining coat turn dull and frizzy with dry flakes and/or bald patches. The horse may be so uncomfortable that it rubs up against anything it can find to relieve the inscrutable itch, to the point of causing great scabs open to infection.

When we think of equine health, we usually think of orthopedics, performance, infectious disease, etc.; however, it's the skin that often shows the first signs of ill health. When the horse's health or nutrition is compromised, the skin's blood supply,

which carries vital nutrients, may also be affected. In fact, the hair and skin can be like a record, showing the signs of previous disease, stress and changes in nutrition for months.

The skin acts as a protective covering for the entire body. It is comprised of many layers organized into three main sections: the epidermis, the dermis and the subcutis. The epidermis is the outer section without blood vessels of which the hair, hooves, chestnuts and ergots are extensions. The dermis is the middle and thickest major section of the skin that provides most of the

skin's bulk. It is comprised of connective tissue fibers made up of collagen and elastin. The dermis has a rich supply of blood and cells that mediate the inflammatory response. The subcutis is the innermost section of the skin and it is composed of fat cells and thin strands of collagen containing connective tissue. The nerves and blood vessels supplying the skin weave their way through the strands of connective tissue to reach the overlying dermis.



CEH's own stallion San Par exhibits the bright shiny coat that goes with healthy skin.

Skin problems occur due to a variety of causes. Bacterial, viral and fungal infections as well as parasites can cause skin reactions that sometimes render a horse temporarily unusable. Just like people, allergies also affect horse's skin, resulting in various sized lumps and bumps, with or without itching or hair loss, which may be very sensitive to touch. Problems with the horse's immune system can cause serious skin problems and there are some genetic skin conditions that can also render a horse unusable. Photosensitization results

from concurrent exposure to ultraviolet radiation (sunlight) with certain foods or medications. This can cause ulcerations and secondary infections, usually of the white or lightly pigmented areas.

Over the last decade, much of the advances in equine dermatology at UC Davis were directly or indirectly attributable to the late Dr. Tony Stannard, as well as Dr. Peter Ihrke. These advances include recognizing the importance of

equine auto-immune skin diseases such as pemphigus foliaceus commonly seen in Appaloosas, bacterial skin diseases, and definitions of several genetic skin diseases. After Dr. Stannard's untimely passing in July of 1997, colleagues from around the country collaborated in publishing his observations in the form of "Stannard's Illustrated Equine Notes" as a special edition of the international refer-

enced journal *Veterinary Dermatology*. This publication will doubtless serve as a reference in all fields of equine dermatology for many years to come.

Currently, UC Davis researchers headed by Dr. Stephen White are studying several areas of equine dermatology. Hyperelastosis cutis is a genetic disease that primarily affects Quarter Horses. The disease results in a lack of cohesion of the superficial layers of the skin, espe-

Continued on next page

Skin

Continued from previous page

cially in the saddle area, which renders many of these horses unsuitable for riding. Assisted by a grant from the CEH, UC Davis veterinary dermatologists, in conjunction with pathologist Dr. Verena Affolter, geneticist Dr. Danika Metallinos, and co-researchers at Colorado State University, are investigating the underlying genetic defect, as well as the inheritance pattern of this disease.

UC Davis researchers are also investigating auto-immune skin diseases in the horse. These diseases occur when the horse's own body "attacks" itself. The immune system goes haywire and treats certain parts of the skin as foreign invaders, sending out antibodies and other immune system components. The result is often inflammation, crusts, and/or open sores. UC Davis researchers, led by Dr. Verena Affolter, are studying this problem in Clydesdales and Shires, breeds that appear to have a predisposition for developing chronic pastern dermatitis. Sometimes, certain breeds have a tendency to develop a particular disease. UC Davis researchers are investigating these diseases and the genetics behind these tendencies.

UC Davis researchers are also studying treatment modalities for various auto-immune skin diseases. In dogs and people, doctors commonly use a drug called azathioprine to treat these diseases, however, there have only been a few cases of its use reported in horses. The first step in this investigation to identify an important azathioprine-metabolizing enzyme in horses called thiopurine methyltransferase (TPMT). Future research will focus on the actual pharmacodynamics (how the substance acts in the body)

Continued on next page

PROFILE

Dr. Stephen D. White

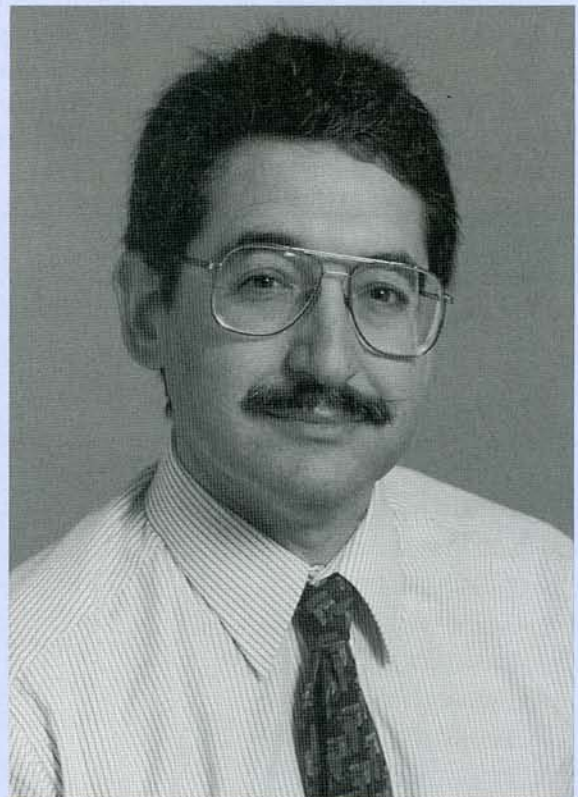
Dr. White is a professor with the UC Davis School of Veterinary Medicine's Department of Medicine and Epidemiology. He is also a Diplomate with the American College of Veterinary Dermatology. He has published his research extensively in scientific and lay publications and traveled internationally to share his research. He joined the UC Davis faculty in 1998 after 11 years as a faculty member with the Department of Clinical Sciences at Colorado State University's College of Veterinary Medicine and Biomedical Sciences.

Dr. White received his DVM from the UC Davis School of Veterinary Medicine in 1979. He then completed an internship in small animal medicine and surgery in 1980, and his residency in dermatology and allergy, both at the UC Davis Veterinary Medical Teaching Hospital (VMTH). In 1982, he joined the faculty at Tufts University School of Veterinary Medicine in North Grafton, Massachusetts, and then became a faculty member at Colorado State University in 1987.

Dr. White's research interests include equine dermatology, congenital skin disease, non-steroidal therapy of auto-immune disease food allergy, skin manifestations

of systemic disease, and retinoid therapy. He came to UC Davis for the opportunity to work in a cohesive, relatively large veterinary dermatology service with Dr. Peter Ihrke. "I especially enjoy working with a great group of people who are interested in the same things I am," said Dr. White.

Dr. Ihrke, Dr. White and dermatology residents run an equine dermatology clinic at the UC Davis VMTH. This clinic is run as a joint effort with the equine medicine service. In addition to examining horses, the following tests may be performed: fungal culture (for "ringworm"), allergy testing (both intradermal as well as via blood samples) and biopsy for microscopic evaluation (histopathology). For more information or to schedule an appointment, please contact the VMTH at (530) 752-0290.



Dr. Ashley Hill Wins the 2001 James M. Wilson Award



This year's James M. Wilson Award went to Dr. Ashley E. Hill for her work on risk factors for suspensory apparatus injuries in Thoroughbred racehorses. The Wilson award goes to the most outstanding equine research publication authored by a graduate academic student or resident in the School of Veterinary Medicine. Dr. Hill's publication

"Risk factors for and outcomes of noncatastrophic suspensory apparatus injury in Thoroughbred racehorses" was honored with the Wilson award.

In her research, Dr. Hill and her colleagues investigated the risk factors associated with suspensory apparatus injuries in 219 Thoroughbreds that were actively racing or in race training. UC Davis researchers evaluated the effects of toe grabs, exercise intensity and distance traveled as risk factors for mild suspensory apparatus injuries. They also compared the incidence of severe musculoskeletal injuries in horses with and without mild suspensory injuries. The researchers examined the study horses weekly for 90 days to determine the incidence of suspensory ligament injury

and to monitor horseshoe characteristics. Every horse's exercise speeds and distances were also recorded daily.

The study revealed that mild suspensory ligament injuries were more likely to occur with the use of toe grabs, higher weekly distances and in horses greater than five years old. Horses with pre-existing mild suspensory ligament injuries were much more likely to develop a severe musculoskeletal injury compared to horses without pre-existing suspensory injuries. The take home message was that modifying training intensity and toe grab height for racehorses with mild suspensory ligament injuries may decrease the incidence of severe musculoskeletal injuries.



Skin

Continued from previous page

of azathioprine in the horse, in conjunction with equine pharmacologist Dr. Cynthia Kollias-Baker.

Another area of skin problems that UC Davis researchers led by

immunologist Dr. Laurel Gershwin are investigating involves the immune system and improving allergy testing. These researchers are discovering how the immune system works which provides information on allergic reactions. This research is designed to develop

improved allergy testing techniques for horses.

Dr. Alain Theon, an oncologist, is also conducting extensive tumor research on horses at UC Davis. He has evaluated various treatments for sarcoids and melanomas, two common skin tumors that can render a horse unusable. Currently, he is investigating the possibility of designing a specific vaccine that can stimulate the horse's own immune response to target skin tumors and cause their regression.

As researchers continue to make advances in equine medicine, dermatologists will have more tools at their disposal to use for the diagnosis, prevention and treatment of skin problems in horses. Veterinarians, just like horse owners, want to restore those shining glistening coats and UC Davis dermatology research will contribute vital information toward that goal.



HELPFUL TIPS

Skin Problems

In general, most skin problems in horses can be divided into several basic areas:

- 1) pruritic (itchy) skin diseases
- 2) hair loss without itching
- 3) nodules (lumps)
- 4) loss of pigment
- 5) sun-induced damage (photosensitization)
- 6) excess scaling

Any of these clinical signs can cause loss of function and/or unacceptable appearance; when they do, it is time to call the veterinarian.

Avoid the use of steroids/steroidal ointment until you know the problem is **not** infectious. The use of steroids can cause infectious conditions to rapidly spread.

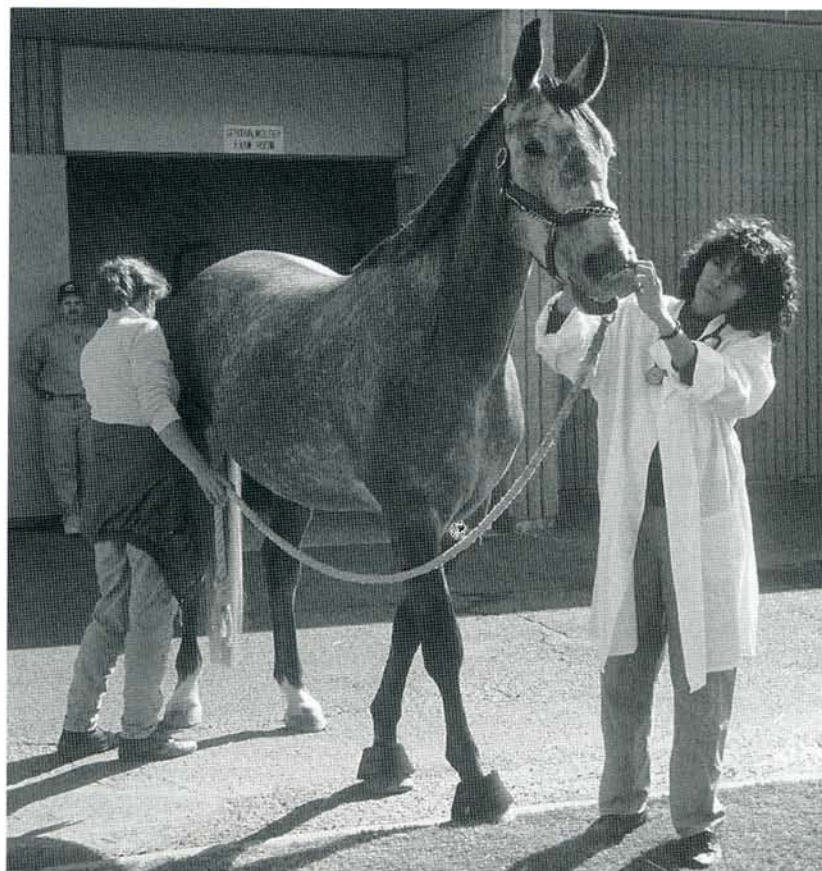
Dr. Monica Aleman wins the first Edwin J. Gregson Memorial Fellowship in Equine Studies

The UC Davis Center for Equine Health is pleased to announce that Dr. Monica Aleman is the first recipient of the Edwin J. Gregson Memorial Fellowship in Equine Studies. This fellowship provides full support and tuition for a graduate veterinarian actively pursuing a Ph.D. in an equine related medical science at the UC Davis School of Veterinary Medicine.

Established by Jon and Sarah Kelly and their Sacramento based Kelly Foundation, the fellowship honors the late Eddie Gregson, a well-known and loved member of the Thoroughbred racing industry. Eddie Gregson was a strong proponent of educational programs that would ultimately improve equine welfare.

Dr. Aleman is board certified in veterinary internal medicine and is pursuing a Ph.D. in comparative pathology, focusing on neuromuscular disease in the horse. "As an internist," said Dr. Aleman, "I am aware of the diagnostic limitations and the lack of understanding of equine neuromuscular disorders. These poorly understood neuromuscular disorders frustrate the owner, trainer and veterinarian. My Ph.D. will focus on solving some of the problems that clinicians like me are faced with on a daily basis."

In 1991, Dr. Aleman received her veterinary degree with honors in her home country of Mexico at the National Autonomous University of Mexico. In her senior year, she completed a one-year Social Service Program in Equine Medicine and Surgery at the equine clinic of the Mexican Army. In 1990, she was awarded a scholarship for an externship in equine medicine and surgery at Louisiana State University. She then returned to Mexico and



Dr. Monica Aleman (right) examines a horse at the UC Davis Veterinary Medical Teaching Hospital. The Gregson fellowship will enable her to pursue her research in equine neuromuscular disorders.

worked at the university as a teaching assistant and also in private practice.

In 1992, Dr. Aleman came to UC Davis for a two-year limited residency in equine internal medicine and then returned to the National University in Mexico to share her knowledge as an associate professor. She headed the equine internship program at the university, created a specialty in equine medicine, updated existing medicine courses and organized continuing education courses. In 1996, she returned to UC Davis as a resident and has taught as a lecturer for the school of veterinary medicine.

Dr. Richard Lecouteur is Dr. Aleman's mentor and supervising

professor for her Ph.D. program. He said, "Monica is highly intelligent, extremely hard working, and has already shown great potential as an innovative researcher. ... The study of neuromuscular diseases of horses is truly in its infancy, despite the obvious practical importance of this area and the high incidence of disorders that affect equine muscles and nerves. I am confident that Monica will use her time as a graduate student to develop a sound basis in the diagnosis and therapy of equine neuromuscular disorders, and that she will use this experience as the foundation for a long and productive career as a specialist clinician and researcher in this area."



Batonnier Dies at 26

The UC Davis Center for Equine Health sadly announces the death of Batonnier, one of California's all-time leading race-horse sires with annual earnings over \$1.4 million. The 1975 bay stallion, by His Majesty and out of Mira Femme by Humpty Dumpty, was found dead in his paddock on July 15 of an apparent heart attack. There were no signs of struggle — it appears he died peacefully.

Batonnier had a very successful breeding career — some of his more notable offspring include Cavonnier, California's 1996 Horse of the Year with earnings of \$1,139,398 who lost by a nose to Grindstone in the Kentucky Derby; Charmonnier with earnings of \$508,590; and multiple stakes winning filly Batroyale with earnings of \$267,294.

Robert and Barbara Walter of Vine Hill Ranch in Sebastopol graciously donated Batonnier to the Center for Equine Health in February of 1998. With a little special breeding management, Batonnier was able to sire three

foal crops successfully.

According to Dr. Irwin Liu who monitored Batonnier's reproductive success, "He was a true gentleman

future veterinarians. "I think the most important lesson that students and residents learned from Batonnier was how a subfertile stallion could be



Batonnier with reproduction specialists Dr. Barry Ball (back row, far left), Dr. Irwin Liu (second from right), UC Davis veterinary students and Ellen Jackson (far right) owner of Victory Rose Thoroughbreds.

and very nice to be around." Batonnier was an asset to the equine reproductive program and contributed to the educational process for

successfully managed to maintain a productive breeding career," said Dr. Liu. Batonnier will be missed by those who knew him.



DONOR SUPPORT

Dollars for Davis Benefit Ride

On July 28th, the Moraga Horseman's Association hosted its annual Dollars for Davis Benefit Ride in the East Bay Hills. Nearly 50 riders participated in the event to raise funds for research at the UC Davis Center for Equine Health. Riders enjoyed a beautiful seven mile trail that weaved its way up and down some steep hills engulfed in thick trees and shade. For the more competitive spirits, the ride also included a trail trials competition

where horses and riders were judged on how well they negotiated



various trail obstacles. Following the ride, the association held a chuck wagon barbecue with awesome food, a raffle and a presentation about the CEH research program.

Preliminary calculations estimate that about \$2,000 will be raised. Thanks go to the Moraga Horsemen's Association for sponsoring this annual event and to Karen Bottiani for organizing the day.

West Nile Virus Moves Westward

The West Nile virus (WNV) is establishing itself in the United States and the Center for Equine Health is closely watching its westward invasion. In 1999, WNV appeared in New York for the first time in the Western Hemisphere and caused disease and some deaths in humans, birds and animals including horses. Previously, WNV was only reported in Africa, the Middle East, Asia and Eastern Europe.

In 1999, WNV primarily affected New York, New Jersey and Connecticut. In 2000, the virus spread along the eastern seaboard from New Hampshire to North Carolina. In 2001, so far, WNV has spread from Maine to Florida and westward to Wisconsin, Iowa, Illinois and Louisiana. The virus has also been detected in Canada. Most epidemiologists expect the WNV to hit Texas this year and California by next summer or fall.

West Nile fever is a mosquito-transmitted viral disease that affects humans and animals. The virus' natural life cycle involves mosquitoes and birds. Humans and animals contract the virus when an infected mosquito bites a person or animal. Humans and horses are considered accidental hosts for WNV. Human to human or horse to horse transmission does not occur. The virus is most prevalent from May to October when mosquitoes are most abundant.

In most cases, WNV infection causes flu-like symptoms. A small percentage of infected individuals develop encephalitis (inflammation of the brain). The most common signs of WNV infection in horses include stumbling, incoordination, weak limbs, partial paralysis, muscle twitching and in some cases, death.

Fever has occurred in less than one fourth of all confirmed equine cases.

From 1999-2000, 85 horses were infected with the virus and 32 of these resulted in death. This year, so far, 81 horses have been affected in at least 10 states with a 33 percent fatality rate. These states include Alabama, Connecticut, Florida, Georgia, Kentucky, Louisiana, Massachusetts, Mississippi, New York and Pennsylvania.

Fort Dodge Animal Health recently released a WNV vaccine for horses. Horse owners should consult their veterinarians regarding its use for high risk individuals. The vaccine's efficacy has not been proven. Horse owners planning to ship their horses to other countries should be aware that vaccinated animals may not meet the import requirements of those countries due to the presence of certain antibodies in their horses' blood.

Additional information on WNV activity is available at:

http://www.usgs.gov/west_nile_virus.html

and

<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>.

What if I find a dead bird?

Do **NOT** touch the carcass. Call the California Department of Health Services to report the dead bird, especially crows, jays, magpies and ravens and arrangements will be made for pickup and laboratory testing.

(510) 540-2356

e-mail: arbovirus@dhs.ca.gov



Spread of West Nile virus in the United States 1999-2001 (as of 9/24/01)

What if I suspect WNV infection in my horse?

All horses suspected of any arboviral encephalitis should be tested. Contact your district office of

the California Department of Food and Agriculture, Animal Health and Food Safety Services:

Sacramento Headquarters:

Dr. Ken Thomazin
(916) 654-1447
(916) 653-2215 (FAX)

Redding District:

Dr. Charles Palmer
(530) 225-2140
(530) 225-2240 (FAX)

Modesto District:

Dr. Davis Willoughby
(209) 491-9350
(209) 491-9350 (FAX)

Fresno District:

Dr. Jeffrey Davidson
(559) 237-1843
(559) 237-4337 (FAX)

Ontario District:

Dr. Herbert Little
(909) 947-4462
(909) 932-5128 (FAX)

COMING EVENTS

Horse Day Symposium

The UC Davis Department of Animal Science will hold its 16th annual Horse Day Symposium on October 13-14. The educational program will include lectures on equine health and management as well as training and handling demonstrations. On October 14, there will be a farrier's workshop.

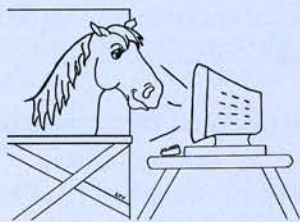
Deadline for pre-registration

is October 5th. On-site registration is also available at UC Davis and begins at 7:00 a.m. For more information, contact the Animal Science Department at (530) 752-1250 or visit their Horse Day Web site at:

<http://animalscience.ucdavis.edu/events/horseday/2001>.



Whoah, CEH is on line!



Visit our Web site at www.vetmed.ucdavis.edu/ceh

Our circulation is too large to support an electronic mailing list, but if you are accessing The Horse Report from our Web site and no longer want a paper copy, just let us know...save us the postage; the horse will benefit! Send an e-mail request to ljchristison@ucdavis.edu

The HORSEREPORT

©The Regents of the University of California
October 2001

Center for Equine Health
(530) 752-6433
www.vetmed.ucdavis.edu/ceh

Director:
Dr. Gregory L. Ferraro
e-mail: glferraro@ucdavis.edu

Writer/Editor:
Laurie Fio
e-mail: ltfio@ucdavis.edu

Dean, School of Veterinary Medicine:
Dr. Bennie I. Osburn

The Center for Equine Health is supported with funds provided by the Oak Tree Racing Association, the State of California Pari-Mutuel Fund and contributions by private donors.

The University of California does not discriminate in any of its policies, procedures or practices. The University is an affirmative action/equal opportunity employer.

The information you provide will be used for University business and will not be released unless required by law. To review your record, contact Advancement Services, 1480 Drew Avenue, Ste. 130, Davis, CA 95616. A portion of all gifts is used to defray the costs of administering the funds. All gifts are tax-deductible as prescribed by law.

THE HORSEREPORT

Mail ID#1415
Center for Equine Health
School of Veterinary Medicine
University of California
One Shields Avenue
Davis, CA 95616-8589

Nonprofit Org.
U.S. POSTAGE
PAID
UC Davis