

Genodermatosis Research Foundation Newsletter

Fall 1999

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Study Begins on Hair/Coat Differences in AKC Breeds

by Robert W. Dunstan, D.V.M., M.S., D.A.C.V.P.

There are many reasons why a dog owner is willing to devote so much time and effort toward the care and maintenance of their pet: companionship, protection, a living thing to care for. However, we contend that two of the main reasons for dog ownership remain largely unrecognized. Simply put, dogs are enjoyable to touch and look at. These tactile and visual interactions between a human and a dog are among the greatest pleasures of "pet" ownership. As a consequence, when the hair coat is thinned or looks dry and unkempt, there is almost invariably a weakening of the human-animal bond. Dogs with coat problems are simply not handled as much.

The importance placed on the hair coat by dog owners is also evidenced by the diversity of coat types that have evolved over the centuries. With the arguable exception of the contours of a dog's body provided by the musculoskeletal system, the feature that most distinguishes the different canine breeds is the hair coat. It is no surprise that every breed listed in *The Complete Dog Book* has standards by which the coat is assessed in the show ring. Although breeders and judges may understand these standards, we contend that they are vague and subject to bias. For example, the coat of the Brittany Spaniel (the first breed cited in *The Complete Dog Book*) is "dense, flat, or wavy, never curly." However, what is meant by "dense," or how "wavy" differs from "curly," is undefined. We have found these poorly defined criteria for canine hair coats to be the rule rather than the exception.

With the importance that the hair coat plays in the human-animal bond and establishing the appearance and identity of a breed, it is surprising there has been no substantive advancement in defining breed differences in the canine hair coat for more than 40 years. Furthermore, the most detailed investigations are relatively inaccessible, appearing in German-language journals.

The Comparative Dermatology Laboratory at Texas A&M University is initiating a study funded by the Canine Health Foundation to understand what makes the hair coat of different breeds so different.

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Meeting Notice

Please join us for
the annual meeting of the
Genodermatosis Research Foundation
Holiday Inn
2340 S. Reynolds Rd.
Toledo, Ohio
Saturday, October 23rd
3:30 p.m.

Dr. George Padgett will be
in attendance and
Dr. Robert Dunstan will be
participating via speaker phone.

RSVP to JoAnn Geramita
3818 22nd St. N.W.
Canton, OH 44708
Phone (330) 478-8322
E-mail jgeramita@neo.rr.com

Reminder about Biopsies

While the Standard Poodle is the
only breed so far to have its own
registry for sebaceous adenitis with the
Institute for Genetic Disease Control,
there is an open database at the GDC
to register individuals
from all breeds.

For more information, contact:
Genetic Disease Control
P.O. Box 222
Davis, CA 95617
Phone/fax: (530) 756-6773

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The Genodermatosis Research
Foundation was organized in 1990 by
a group of dog owners, breeders and
veterinarians with a common interest
in genetic skin disorders in dogs.

The Foundation provides education
and scientific support for research
leading to the alleviation of animal
suffering through understanding,
diagnosis, treatment, cure and preven-
tion of heritable skin diseases.

The GRF is a non-profit organization
with headquarters at 3818 22nd St.
N.W., Canton, OH 44708
Contributions are welcome.

Membership dues are \$20 annually.

Vitamin A Responsive Skin Disease in Golden Retrievers

by Alice Jeromin, D.V.M., Veterinary Dermatologist

With the popularity of Golden Retrievers ever increasing, we are seeing more and more with "new" skin problems. (Dermatologically speaking, Goldens tend to be inhalant allergic as well as have yeast and bacterial skin infections.) The "newest" skin problem we are seeing in Goldens is a Vitamin A Responsive Skin Disease. Unfortunately the name does not adequately describe the disease; it describes the therapy to which most of the dogs respond.

Many owners of these affected Goldens tend to describe their dogs as "snowing" in that they shed large flakes of skin which resemble large snowflakes. These dogs are affected most likely as pups (congenitally) with a mild scaling of the skin that is not noticed by the owner. However when they approach 6 to 12 months of age, the flaking ("snowing") tends to be more noticeable and that is when the dog is taken to the veterinarian for evaluation.

The disease can range from mild to severe in that severely affected dogs tend to have an odor with mild-to-moderate itching most likely due to a secondary bacterial infection. (Normal skin helps ward off bacteria but any major abnormality of the skin such as too dry, too greasy, etc., will actually encourage bacterial growth). Antibiotics are helpful in keeping the skin infection under control, but do nothing for the flaking. Other diseases can cause flaking of the skin as well, so in order to diagnose this particular skin problem, a skin biopsy is needed.

Once the diagnosis is made via a skin biopsy, the veterinarian has several options. In our clinic we will start the patient on natural Vitamin A as well as large doses of fatty acids. Natural Vitamin A, in this disease, can take up to 90 days to become effective. Synthetic Vitamin A or retinoids may also be used but the cost is considerably higher, especially since the treatment is for a lifetime. Bathing in keratolytic shampoos may be helpful as well since they tend to strip off the top abnormal layer of the skin. Many times the owner will feel that the dog has "dry skin" which is true, in a sense. However this is dry skin magnified by 100! The underlying problem is most likely an abnormality in the orderly maturation of each layer of the skin. Vitamin A and fatty acids are helpful because, particularly with Vitamin A, they help normalize the disorderliness.

Most Goldens with this problem tend to respond after a few months to the above therapy, however occasionally one will be more severely affected. These dogs tend to have an odor (because of the accompanying bacterial infection) and some owners cannot deal with the esthetics. In addition to the oral medications, they require frequent bathing. Thankfully the disease appears to be confined to the skin without any underlying internal medicine problems. ■

Web Sites of Interest

Understanding Sebaceous Adenitis
www.pageweb.com/vipoodle/undst_sa.htm
Institute for Genetic Disease Control in Animals
www.vetmed.ucdavis.edu/gdc/gdc.html

Commonly Asked Questions About Skin Biopsies

by Kelly M. Credille, D.V.M., D.A.C.V.P.

The skin punch biopsy is a useful tool in the diagnosis of skin problems when used as part of a thorough workup. It can be used to aid in the diagnose of autoimmune diseases, hair loss diseases, infections, and sometimes allergies, as well as other conditions. Sometimes the biopsy is nondiagnostic too.

1. How much discomfort does a skin biopsy cause and will there be a scar?

Other than the discomfort your dog feels when given the local anesthetic, a skin biopsy is a painless procedure. Most biopsies, including the 6 mm diameter biopsies needed for SA screening, are taken using a local anesthetic very similar to that used in your dentist's office. For each biopsy needed, a small amount (at most a quarter of a teaspoon) of anesthetic will be injected under the skin at the site to be sampled.

As you probably know from the dentist, the anesthetic can sting while being injected, but soon afterwards the site is numb for hours. The needle used to inject the anesthetic is small and causes only a small pinprick when inserted into the skin. Once the skin is numbed, your dog should not feel any discomfort for the rest of the procedure. To take the biopsy, a simple instrument called a biopsy "punch" is used. The "punch" consists of a hollow, cylindrical blade attached to a plastic handle. The blade is placed on the skin and with pressure and a circular wrist motion, it is used like a cookie cutter to remove a core of skin. The biopsied site will bleed a small amount but this usually stops after a few minutes.

After the cylindrical plug of skin has been removed, one or two skin sutures will be placed to close the biopsy site. Again, because of the local anesthetic, your dog will not feel the suturing. Once the biopsy site is closed, it should not be painful to your dog. After seven to 10 days the site should be healed and the sutures will need to be removed — a process that only takes a few seconds. Because the biopsy punch is so sharp, the edges of the biopsied site will heal together quickly and leave only a very small scar that is completely hidden by the hair coat.

2. Are there any complications of a skin biopsy?

Because a skin biopsy is such a simple procedure, complications are rare. The most common is bleeding from the site after the dog is home. If this happens, applying pressure to the site for a few minutes with gauze from your home first aid kit should stop the bleeding. Some dogs will remove their own sutures prematurely, and in these cases the site will have to heal on its own. This will slow the healing process and may result in a slightly larger scar, but even here, any scar is very hard to detect after the coat re-grows, even in short-coated breeds.

An unusual side effect of skin biopsies that we see occasionally and your vet may mention, is that hairs may grow back a different

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SA in a Dachshund

by Raúl Gonzalez Castro, M.V.

I have been a veterinarian for six years, five of which have been in the medicine and surgery of small animals. I also work in reproduction in horses.

My patient, Spark (Chispita in Spanish), is a Dachshund female with short hair, brown color, 15 years old. She has had sebaceous adenitis for five years.

For four years, her problem was diagnosed as an idiopathic allergic problem. The treatment was antihistamine and corticoid drugs, without results.

I have known Spark for one year now. When I first saw her, she had hyperkeratosis on her back, face and foot. I requested a biopsy of the skin and subcutaneous tissues. At that moment she presented with pyodermititis, hyperkeratosis, seborrhea and pruritus.

The lesions were mainly on the back, thorax and all four legs, over about 70 percent of her body, and there was some pyodermititis and substantial hair loss. All blood tests I performed were normal. The skin punch biopsy confirmed my diagnosis of sebaceous adenitis.

From that time, the SA has been treated with 400 mg. vitamin E per day, Omega oil and 5 mg. of triamcinolone every 8 weeks. She is bathed with a keratolytic shampoo every 15 days, and eats a diet low in fat and protein (Purina with 18 percent protein).

She also has a mammary adenocarcinoma of 0.5 cm. in diameter, cataracts, ocular lesions in the eyes and moderate gingivitis.

The quality of life of my patient has improved and she is staying in good form and controlling the annoying symptoms of the illness. ■

Raul Gonzalez Castro, M.V., practices in Santiago, Chile.

Review: *A Pedigree to Die for*

by Laurien
Berenson

(Kensington
Books, 1995)

In case you are wondering why a work of fiction is included in the GRF newsletter, read on and you will see why.

A Pedigree to Die for features Melanie Travis, a 30-something Connecticut teacher and single mom. When her Uncle Max is found dead of an apparent heart attack on the floor of his Standard Poodle kennel, her Aunt Peg suspects foul play. In addition to finding her husband dead, Peg has also found one of her prize Standard Poodles missing.

Aunt Peg convinces Melanie to investigate her husband's possible murder, and in doing so, Melanie finds herself in the midst of the world of show dogs. She poses as a poodle breeder so she will have a reason to move about in the Connecticut show scene. After meeting and secretly scrutinizing judges, professional handlers, fellow exhibitors and poodle-hating neighbors, Melanie solves the crime — but not before she becomes hooked on the sport.

And what does this have to do with the GRF? One of the clues to solving the crime is a dog with *sebaceous adenitis*!

If you just can't get enough of the disease, you will love reading about how it plays into this murder mystery.

This is the first in a series of Melanie Travis mysteries. The author, Laurien Berenson, is a breeder and exhibitor herself, so she is knowledgeable of the inner working of the dog show world. This is a great book for both dog lovers and mystery buffs. ■

— Jenny Drastura

Study on Hair/Coat Differences

(Continued from Page 1)

The study will use a combination of histopathology and a computerized analysis to determine the orientation and number of follicle unit area as well as the diameter and curvature of the hair shafts.

The first evidence that defining such differences was even possible occurred when we started examining biopsies from clinically normal Standard Poodles for the presence of sebaceous adenitis. What we learned from looking at a large number of these essentially normal skin biopsies from a single breed is that Standard Poodles have a striking homogeneity in the number and diameter of hair shafts they produce and that this pattern appears to be distinctive for the breed. We did not realize how distinctive this hair pattern was until we started looking at samples from miniature poodles and found that they did not have as many or as large hair shafts as Standard Poodles.

In short, the diameter of the hairs of different breeds of dogs appears to function as a "fingerprint" for breed identification. To date, this appears to be true for Miniature and Standard Poodles, Labrador Retrievers, Doberman Pinchers, Siberian Huskies and Alaskan Malamutes. Determining whether this observation will be sustained for all canine breeds is an objective of this study.

We believe this is an important investigation. Consider that we do not know how the coat of a Whippet differs from that of a Puli and have no objective way of determining what makes the coat of one dog better than another. In addition to serving as a means of breed identification, defining normal in terms of number and diameter of hairs/unit area can be used to assess the severity of diseases with hair loss and determine whether the disease affects guard hairs more than undercoat hairs. We believe this knowledge will allow veterinarians to make a definitive diagnosis of some diseases without the need for biopsy or other laboratory tests. Because we will be sampling a large number of dogs representing different breeds, we propose obtaining a blood sample for DNA isolation to be used in future investigations.

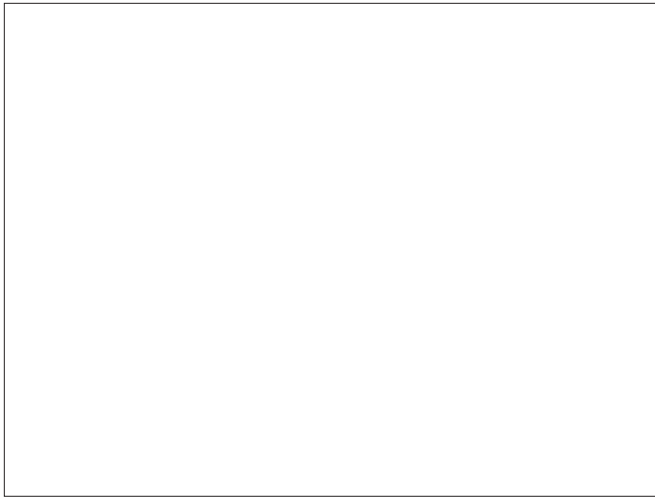
The study will require the assistance of breeders from across the country. Our goal for the first two years is to obtain samples from the 60 most popular breeds recognized by the AKC. Punch biopsies, clipped hair and blood from five dogs of each breed are needed. For breeds with multiple coat types (i.e., Dachshunds), samples from each of the different coat types will be obtained. Over the next several months, we will be contacting representatives of national breed clubs to help us identify dogs with a theoretical "ideal" coat for inclusion in the study. Because clipping of the coat is required, we are looking for young, adult dogs that are not being shown competitively. Funds are available to defray the costs of these procedures.

If you are interested in participating in this study or have additional questions, please do not hesitate to contact us:

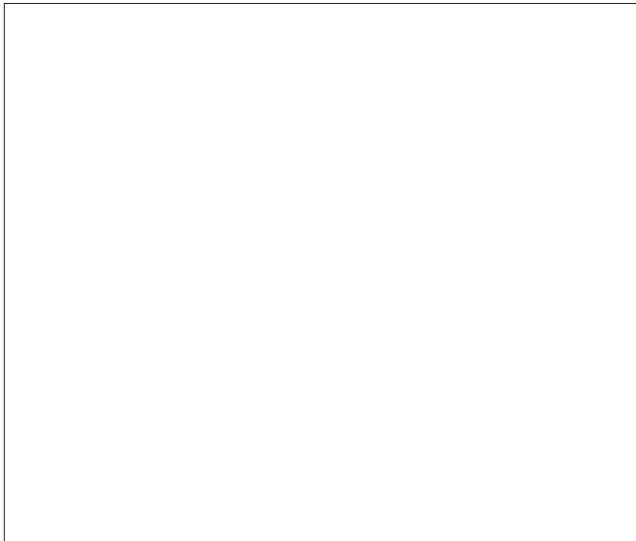
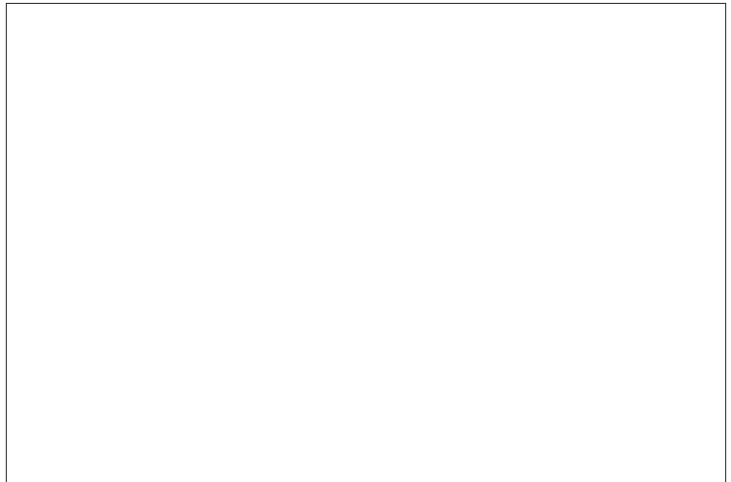
Comparative Dermatology Laboratory
c/o Dr. Robert W. Dunstan
210B VMA, College of Veterinary Medicine
Texas A&M University
College Station, TX 77843-4467
Phone (409) 845-2651 • Fax (409) 862-1147
E-mail dunstan@cvm.tamu.edu. ■

Photos from Readers...

Please send your photos to the GRF for inclusion in a future newsletter!

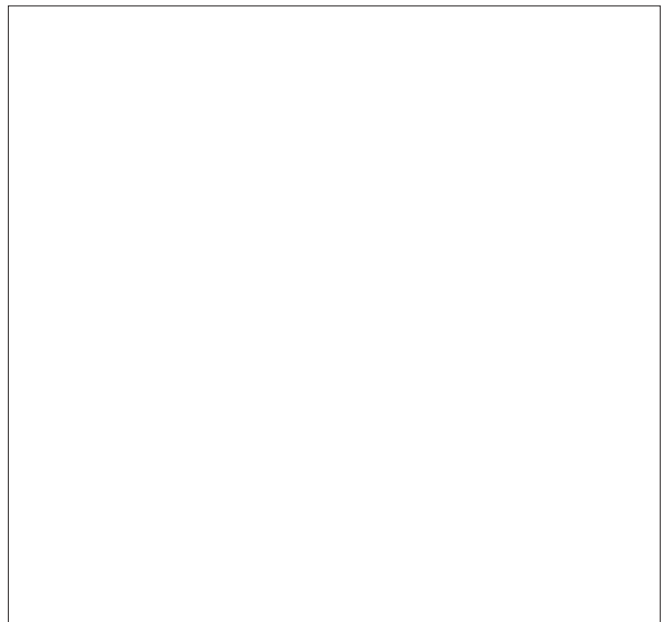


Left and below: Before and after pictures of Daria, an 8-year-old spayed female Shih Tzu. She developed SA about 4 years ago, and has been getting oil baths and tea tree oil applied to the lesions, along with other methods her "owner," Dawn Secrest, found in the SA Survey. Daria's female littermates also have SA, but none of the males are affected. Daria is still having trouble with ear infections and inflammation on her feet.



Above: Amy, a 9-year-old SA-affected Standard Poodle, is a sweet dog and great companion to her "owner," Jackie Friedman.

Right: Shasta, a 5-year-old SA-affected Lhasa Apso, has been getting baths in 50/50 olive oil and water for the past year. Pure aloe and several essential oils are added to the mixture. At the time of diagnosis in 1997 her trunk and tail were bald and covered in a black, odorous, tarry substance. Photo shows regrowth of outer coat, but the undercoat has not grown back. Shasta is "owned" by Charlie and Jenny Drastura.



Update — SA Survey

by Jenny Drastura

Since the publication of the results of the survey of dogs with SA, I have received 35 more responses. Four new breeds are represented: Bichon Frise, English Cocker, English Springer Spaniel and Chow Chow. There are three mixed breed dogs (poodle/terrier, poodle/cocker and Akita/German Shepherd Dog).

As with the original survey, oil baths are the most successful SA treatment, used by 19 respondents. Most are using a mineral oil derivative (baby oil, Skin-So-Soft, etc.); one uses olive oil; and one uses grapeseed oil. Thirteen of the respondents had not been informed about the oil baths. In fact, one was told this treatment would be of little use.

Of the 19 not using oil baths, 11 have little or no improvement with the method being used (usually medicated or tar shampoos). Two are having good results with propylene glycol rinses or sprays after baths or during the week. One dog not receiving oil baths has shown improvement with primrose oil given internally. (Five did not respond to this question.)

Other facts from the survey:

- Three of the dogs in the survey have siblings with SA.
- The mean age at diagnosis was 4 1/2 years of age, the oldest being 11 years and the youngest 1 year.
- The average time from onset of signs to actual diagnosis was approximately 2 years. One case was found in a routine biopsy and in another case the biopsy was done immediately after the symptoms developed. ■

SA in Decker, a Standard Poodle

by Lee Borkwood

Decker, a white Standard Poodle, came to live with us when he was 6 years old. He was a super dog, always the perfect gentleman and very affectionate. This is not to suggest that he was a wimpy or intimidated creature, but he never picked a fight and tolerated Zed, our somewhat aggressive black Standard Poodle, with good humor. Decker had won his Canadian championship easily and whenever we picked him up from the groomer's, people seemed to come from all directions to admire and pet him and generally "ooh and ah." (Zed never got as much attention he just wasn't as "pretty.")

In 1990 on a trip through the California Redwoods, Decker became infested with ticks (we picked 18 off him), and as a result, he developed Lyme's Disease. Zed didn't have any ticks though he was far more adventurous and the suggestion was that the white color was more of a draw for the insects. A course of antibiotics soon cleared up the problem and everything seemed fine. Then his hair started to fall out.

Poodles are great because they don't shed. At first we didn't pay attention to all the white hair everywhere but when we finally twigged and took Decker to the vet, he was diagnosed with a thyroid problem and put on Synthroid. He didn't get better. At that time SA was fairly unknown, but our vet had been alerted by one of her poodle breeding clients so she sent a biopsy off to Dr. Robert Dunstan. Yes, Decker had SA. The vet later speculated that the SA had been triggered by the Lyme's Disease

Decker lost his hair in large patches. We followed the recommended baby oil procedures but stopped after a year as it didn't seem to help. Decker was really miserable hanging around for an hour while the oil supposedly did its job. Furthermore, what is a person supposed to do with a greasy, oil slick dog in the dead of winter? He couldn't go outside and I certainly wasn't going to try to keep the poor soul in a cold bathtub for an hour! We sort of solved the problem by covering the bathroom and the upstairs landing with drop sheets. Ugh! There was another problem with the baby oil. I didn't like the idea of using a petroleum product on already inflamed skin so I started using olive and avocado or olive and jojoba oils. Later I added various essential oils to the mixture and, later still, I stopped the overall greasing and just dabbed a combination of essential oils in a small amount of carrier oil on the bare patches.

We stopped all commercial dog food (read Dr. Belfield's *How To Have A Healthier Dog* or Dr. Pitcairn's *Natural Health for Dogs and Cats*), and added a liver tonic and other nutritional supplements. His hair grew back. It was thin in some places and he had a couple of almost bare saddles but he had hair.

Decker was never bothered by his appearance. As Gary Kowalski says in his book, *The Souls of Animals*, "A dog is not afraid of what other people think of him or anxious about his public image." He ate well, played well and slept well. His skin wasn't itchy and he didn't

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Questions About Skin Biopsies

Continued from Page 3

color at the biopsy site. Usually if the coat is light, the new hair will be darker. In dark or black dogs, the re-growth may be white. Often the hair color will correct itself but this may take some time.

Because the skin heals so well, skin biopsies do not need to be taken using the same measures to ensure sterility as more invasive procedures. This means the site does not need to be scrubbed vigorously prior to the biopsy, but just gently cleaned with alcohol. Very rarely, perhaps one in several hundred cases, an infection can develop at a biopsy site. If an infection occurs, the biopsy site will feel hard, appear red and may drain. This will slow healing and may result in a slightly larger scar at the site. If you think this is occurring, contact your veterinarian, as antibiotics may be needed to clear the infection.

Finally, veterinarians are always careful about the total amount of local anesthetic injected. If given in excess, and if enough is absorbed into the dog's system, the anesthetic can depress the heart rate and induce seizures. This is virtually never a problem in an adult dog, but must be kept in mind on the rare occasions when many biopsies are taken from a small puppy.

3. How much of my dog's show coat will have to be clipped in order to perform the biopsy?

As we have discussed above, skin biopsies are not sterile procedures and extensive and close clipping of the hair does not have to be done. In order to maximize the cleanliness of the biopsy site, it is optimal to clip long hair out of the way before taking the biopsies and if your dog is being biopsied as part of a work-up for a skin disease, we would recommend allowing your vet to clip the coat as much as they think necessary.

For dogs in show coat, biopsies can be taken with no or minimal clipping at the biopsy site; however this will slightly increase the risk of infection, as hair may be brought into the surgical site. We have found that some veterinarians are willing to take punch biopsies for SA screening without clipping when the dog is in full show coat. If this is important to you, this should be discussed with your vet before taking the biopsy specimens. ■

Note: The dermatologists listed below have agreed to a diagnostic protocol for evaluating skin biopsies for the presence of sebaceous adenitis:

Dept. of Vet. Pathobiology, Texas A&M University, c/o Robert Dunstan, DVM, MS, Diplomate, ACVP, SA Research Project, or Kelly M. Credille, DVM, Diplomate ACVP; 210 B Texas Veterinary Medical Center, College Station, TX 77848-4467; Phone (409) 845-2651

Ann M. Hargis, DVM, MS, Diplomate ACVP, Dermato-Diagnostics, c/o HCS, 85 SE Eighth Ave., P.O. Box 1109, Oak Harbor, WA 98277; Phone (425) 775-6903

Maron B. Calderwood Mays, VMD, PhD, Florida Animal Resources, 13703 Millhopper Rd., Gainesville, FL 32653; Phone/Fax (352) 331-8032.

Brian Wilcock, DVM, PhD, 21 Vardon Dr., Guelph, ON, Canada, N1G 1WB; Phone/Fax (800) 853-PATH

Yager-Best, c/o Vitatech, 151 Esna Park Dr., Unit 13, Markham, ON, Canada, L3R 3B1; Phone (800) 667-3411; Fax (905) 475-7309 (Susan J. Best, DVM, DVSc and Julie Yager, BVSc, PhD)

SA in Decker

Continued from Page 6

seem to be cold when most of the hair was gone. The SA seemingly didn't bother him at all.

The same can't be said for many people who saw him. They were afraid to touch him and we often saw them cringe if friendly old Decker got too close. Several people told us we should have him put down and a couple said we should do something about "that terrible mange." One man thought he was some kind of a poodle cross. At first I used to go to great lengths to explain the problem but after awhile I just said that Decker was losing his hair like most old men. We lost Decker just before his 16th birthday — he was happy and sassy to the end.

We really miss them (Zed is gone too) and encourage everyone who has an SA-affected dog to hang in there and never mind what other people say — it's your dog and you love him, the rest doesn't matter. ■

Editor's note: There is no evidence of any connection between SA and Lyme's Disease; this is the opinion of one veterinarian. Also, while Decker did not respond to oil baths, it has been our experience that the majority of dogs do very well with this treatment.

Other Web Sites of Interest

Home Therapy for SA

www.pageweb.com/vipoodle/hmrxa.htm

Survey of SA Dog Owners

webpages.marshall.edu/~drastura/SAsurvey.html

Results of Survey

webpages.marshall.edu/~drastura/results.html

Search still on for test breeding dogs

The Genodermatosis Research Foundation is still looking for an SA-affected Akita in order to do a test breeding to an SA-affected Standard Poodle. The Akita must have hips and eyes certified and be free of any other major genetic health problem. The test breeding would tell if the SA gene in Akitas is identical to that in Standard Poodles.

We are also in need of people who will agree to be caretakers for the resulting puppies.

If you are interested in participating in this important research, please contact GRF secretary Jo Ann Geramita at (330) 478-8322 (Eastern Time). M

Reality Check: Breeds Known (so far) to Have SA

Airedale Terrier
Akita
American Eskimo*
Beagle*
Bichon Frise*
Border Collie*
Cairn Terrier
Chesapeake Bay Retriever*
Chow Chow*
Collie
Dachshund
Dalmatian
English Cocker*
English Springer Spaniel*
German Shepherd Dog
Golden Retriever
Great Pyrenees*
Havanese
Irish Setter
Labrador Retriever
Lhasa Apso
Maltese
Miniature Pinscher
Miniature Poodle
Mixed Breeds
Old English Sheepdog
Poodle, Standard and Toy
St. Bernard
Samoyed
Springer Spaniel
Shetland Sheepdog
Shih Tzu
Vizsla
Weimaraner
Welsh Corgi, Pembroke

Bold = New from Last Newsletter

*GRF Survey respondents reporting positive skin biopsies.

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Want to participate in canine skin research?

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- ; Here's my contribution for skin research and education.
- ; I want to be a member of GRF. Cost is \$20 for individual or family.

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Address _____

City _____

State/Country _____

Telephone _____ Fax _____

E-mail _____

Return to: GRF, 3818 22nd St. N.W., Canton, OH 44708

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Donations to GRF may be deductible. Contact your tax advisor for details.

Genodermatosis Research Foundation

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