Canine Genetics, Simplified
By Jody Haynes & Kim Miles

People who know very little about wolfdogs often erroneously think of wolves and dogs in terms of ‘black’ and ‘white’—with the wolf being an endangered wild species and the dog being man’s best friend. Wolfdog owners are also sometimes a bit confused over the distinction between wolves, dogs, and wolfdogs.

Three of the most common questions that are asked—by wolfdog owners and non-owners alike—about the genetics of wolves, dogs, and wolfdogs are as follows: (1) Are ‘wolf’ genes stronger than ‘dog’ genes, or ‘male’ genes stronger than ‘female’ genes?; (2) Can genetic studies distinguish between a wolf and a dog?; and (3) Is there a genetic test to determine if an animal is a wolfdog, and if so, can the test determine what percentage of wolf is in the animal?

We will address these questions here, but first we will attempt to clarify the underlying science surrounding genetic studies of lupine canids.

Background on DNA

To understand the similarities and differences between wolves and dogs on a genetic level, a little background on DNA should prove helpful.

Animals have two types of DNA: nuclear (nDNA) and mitochondrial (mtDNA). Nuclear DNA is found in the nucleus of a cell, within tightly packed units called chromosomes. Each cell has two copies of each chromosome (this is termed ‘diploid’). One pair of chromosomes is involved in sex-determination and is, therefore, referred to as the sex chromosomes. The other pairs of chromosomes are called autosomes. All mammals have only one pair of sex chromosomes, but the number of autosomes varies according to species. The genes coded for by nDNA are responsible for external, or phenotypic characteristics (i.e., for looks), and for behavior, while they also have important regulatory functions inside the cells.

Mitochondrial DNA, on the other hand, is separate and distinct from nDNA and is found in tiny structures known as mitochondria that reside inside cells. Mitochondria are responsible for producing energy for the cell by breaking down carbohydrates and other ‘food’ molecules in a process known as aerobic respiration. Mitochondria operate somewhat independently of the cells in which they reside, and they have their own DNA, which is replicated independently of nDNA. This mtDNA primarily governs the synthesis of the RNA and proteins that the mitochondria need for the specialized task of producing ATP, the energy currency of a cell.

Mitochondrial DNA is slightly different from nDNA. For one thing, mtDNA is a circular molecule that does not occur in pairs (this is termed ‘haploid’), and is inherited maternally, which means that it comes only from the female of the species. Secondly, mtDNA molecules do not undergo recombination, which means that the molecules are passed to the offspring intact, rather than in the nearly infinite combination of genes in nDNA that results from genetic recombination. Finally, mtDNA accumulates mutations at a faster rate than nDNA. For these reasons, scientists often choose to analyze mtDNA in studies of the genetic relationships of organisms.

Genes are discrete pieces of DNA that code for particular gene products known as proteins. Slightly different forms of the same gene are referred to as alleles. In nDNA, each chromosome pair has two alleles, one on each chromosome in the pair. Sometimes the two chromosomes within the pair have the same allele, and other times they have different alleles. Some alleles are dominant and are always expressed, while others are recessive and are only expressed when both alleles of a gene are recessive. In mtDNA, all genes are linked together on a circular molecule and all are expressed, since the mtDNA molecules

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FLA Acknowledgements

Special thanks to those who provided donations or contributed their services to FLA this quarter:

- Barbara Speer-Skeoch for accepting the position of Secretary of FLA. We are in the process of getting all of the necessary files to her and expect that she will be operational within the next quarter. Welcome aboard, Barbara!
- To those who have agreed to provide presentations for the next Rendezvous, April 26-28.
- To those who have volunteered their time and services in helping out with the Rendezvous.
- We are still seeking volunteers to help with setting up, to assist at the registration table, to run and assist in the auction, to collect for the raffle, to take pictures, etc. Please contact Barbara, the FLA Secretary, at 352-840-9957 or at info@floridalupine.org, if you are interested in volunteering.

FLA Rendezvous 2002

Enclosed, members will find the Rendezvous information. Included are the directions; a schedule of events; a letter of intent for anyone interested in donating tax deductible items for our Rendezvous Auction; a list of items that campers should bring; a list of items for ALL members to choose from and to bring for our dinners Friday and Saturday nights. Please help by bringing at least one item on the list! (Non-members may call for specifics: 352-840-9957.)

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From the Desk of the Secretaries: Former & New
By Barbara Speer-Skeoch & Kim Miles

Florida Lupine has selected a new secretary for the 2001-2003 term. Please welcome Barbara as the newest member of the FLA Board and our newest office. As the former interim Secretary, I (Kim Miles) can hand over the job with relief, allowing me to focus more on my editorial responsibilities and allowing Barbara to focus all her energies into the secretary position. Barbara will be getting a P.O. Box in Ocala for all secretarial mail to be sent directly to her. In addition, she has been added to the info@floridalupine.org email account. We have already transferred a large number of documents to Barbara and have a few more minor issues to take care of and then Barbara will be up and running.

As for secretarial matters that have occurred this past quarter.... The annual FLA Rendezvous has been scheduled for April 26-28 this year. We hope that you can all attend. Enclosed, members will find a tentative agenda and all of the location and contact information. There are a limited number of cabins and they tend to be reserved far in advance, so if you wish to have a cabin for the weekend, you will need to contact Barbara as soon as possible.

We are in need of more volunteers for the Rendezvous. We need people to assist with the following duties: the auction, the set up, the welcome, the registration table, the Dog Fun Show, the raffle, the preparation for the meals, etc. If you wish to volunteer, you may contact Barbara at info@floridalupine.org or at 352-840-9957. Duties are delegated on a first-come, first-served basis, so if you wish to volunteer for some specific duty, you need to do so quickly.

T-Shirts are for sale to members for $15. We currently have beige shirts with front pockets; the FLA logo is provided on the pocket and the FLA cartoon is centered in a black silk-screened design on the back of the shirt. T-Shirts will be available for sale at the 2002 Rendezvous. We hope to have a larger variety of colors and designs in the future, but we will first see how the two dozen shirts we have pre-ordered will sell.

We have received almost ninety pictures for submission to the calendar, thanks to all of the members who have participated in this endeavor. We are currently in the process of selecting the final pictures and hope to begin production of the calendar within the next four-six weeks. In addition, we hope to have the calendars for sale at the 2002 Rendezvous. The calendar will be an 18-month calendar and will begin in July 2002 and run through December 2003. Please help us to make this a worthy effort.

From the “Virtual” Desk of the Webmaster
By Jody Haynes

In November 2001, the FLA Board of Directors decided that it might be a good idea to set up a special e-mail list that would allow our Members to communicate with the Directors, and among themselves, about wolfdog- and FLA-related topics. The e-mail list is private and is for FLA Members and Directors only. Therefore, subscription to the list requires moderator approval. We set the list up this way as a security measure, so that non-FLA members would not be able to get on it.

On 8 December 2001, I sent an e-mail announcement of the new Members e-mail list to all of our FLA Members for which we have e-mail addresses. To date, only four Members have requested to join. You can learn about how to join from the new page on our website set up for this purpose, located at http://www.floridalupine.org/memberinfo/email-list.htm. Once approved, you will receive an autoreply e-mail from Yahoo! Groups that will explain the important information about the group.

I am happy to announce that we now offer FLA t-shirts for sale on the website. For more information, you can visit the webpage set up for this purpose: http://www.floridalupine.org/memberinfo/tshirts.htm. Shirts are $15 each. At the moment, we are offering black on natural-colored shirts. In the future, we hope to add maroon on natural and black on gray shirts.

Please visit us on the web today— at www.floridalupine.org—and encourage your friends, family, neighbors...and anyone who will listen to do the same! And, as always, feel free to send your comments, criticisms, and suggestions involving the website to me at webmaster@floridalupine.org.

Happy surfing!
From the Desk of the Treasurer

By Mayo Wetterberg

I hope you all had a happy holiday season. Many happy returns and great days with your furry companions. And a super New Year ahead.

Winter in Florida is a great time to enjoy our animals. They love the break from the heat, are much more active and lively, and tend to “investigate” things with more enthusiasm. I’m sure many of you are also enjoying the seasonal wuffie “attitude adjustments” that lead into breeding activities. I wish you well. Once was all we could take—the vet got five patients to fix in a two-week period. Calm now reigns through the winter season.

Summarizing Treasurer business, we have renewed all our State of Florida requirements for non-profit status earlier this fall, and received our state sales tax-exempt certificate. This certificate will allow us to buy supplies and some services without having to pay sales taxes. After a delay of eight months, Florida Lupine Association is finally listed in the federal list of non-profit organizations. This will help in getting and accepting donations because potential donor organizations can independently verify our status just by checking the IRS website.

Now that all the tax-exempt and non-profit registrations are complete, my next project is to begin an attempt at grant writing. Hopefully, this will be a way to solicit donations to allow us to do more toward getting information out concerning wolfdogs. I have been researching the process, reading a couple of “how-to” books and looking for organizations that may be wolfdog friendly. I hope to be able to report progress by the spring Rendezvous. If there happens to be anyone in Florida Lupine that has had any experiences with grant writing, your input would be appreciated, either by email or snail mail.

This fall, your Directors spent a lot of time discussing FLA goals and membership—partly to reaffirm we are headed in the right direction and partly to evaluate ways to increase involvement for those members who have expressed a desire to participate more. As we grow in size and capability, we will definitely need more members to help and to participate in various areas. The end goal is to develop an active, respected wolfdog organization that meets the needs of its members. Communication is probably the most important area, and a basis for any successful organization. Our members email group was created to help members communicate better with Directors and other members. But this doesn’t reach everyone, so you may be seeing some surveys and letters to members in the next year. These are additional ways to reach out and determine what you all want to see in Florida Lupine and for us to improve as an organization. From all this, we hope to continue improving and growing as we promote responsible wolfdog ownership.

The 2002 FLA Rendezvous is coming! We started planning early this year and have changed some things to make it a bigger and better event. We have corrected some of the things that gave us last minute headaches last year and will have fliers out early enough to get lots of participation. It is time to start planning for the spring event if you haven’t already.

One last note. Even though Florida Lupine was not established to do wolfdog rescue as an organization, there are several FLA members who do rescue. And a huge portion of these rescues are immediate and urgent situations. Unfortunately, most of the people who take in rescues are continually full because we have more rescues than we have awaiting homes. This is not a pitch for people to accept rescues (although we could use that also), but rather a search for people who might be thinking of getting a wolfdog, either an initial adoption or a companion for another animal. We would like to pre-screen potential owners and maintain a list of interested people. This would greatly improve the placement process. So if any of you out there are interested in adopting a wolfdog, or have a friend who is looking seriously for a wolfdog, we would like to know. Our central rescue coordinator is Thom Whaley. Please contact him or one of the other directors, and we would be happy to discuss wolfdog adoption.
How is DNA Inherited?

Nuclear DNA is inherited in the form of chromosomes—half of which come from the mother and half from the father. During the process of meiosis, which takes place in the sex organs, haploid eggs are produced in females and haploid sperm are produced in males. (Remember that haploid refers to one copy of each chromosome.) During fertilization, these haploid sex cells fuse and restore the diploid condition to the new embryo. (Diploid refers to two copies of each chromosome.)

As noted above, mtDNA is haploid and exhibits matriarchal inheritance, which means that it comes solely from the female parent. This occurs because animal eggs are typically large and carry mitochondria with them. On the other hand, there is no room for mitochondria in the part of the sperm that fuses with the egg at fertilization. Therefore, mtDNA is passed from mother to offspring through the egg.

The following examples illustrate the differences between the ways in which nDNA and mtDNA are inherited—specifically with respect to wolves, dogs, and wolfdogs:

? A female pure wolf breeds with a male pure dog — the pups will all receive the wolf mtDNA from the mother, and they will have exactly 50% dog nDNA and 50% wolf nDNA.

? A female pure dog breeds with a male pure wolf — the pups will have the dog mtDNA of the mother, and the nDNA will again mix equally.

? A wolfdog (of either sex) breeds with a wolf, wolfdog, or dog (it doesn’t matter) — the mtDNA will always remain pure ‘dog’ or ‘wolf’, depending on the mtDNA of the mother—and the mothers’ mother and so on. Once again, ‘wolf’ and ‘dog’ nDNA will mix, but this time it will not be equal; rather, the processes of genetic recombination and independent assortment will result in a nearly infinite number of possibilities of the relative proportions of ‘wolf’ and ‘dog’ nuclear genes in these pups.

In the first two cases above, all of the pups will appear to be exactly intermediate between the wolf and dog parents, but the mtDNA will be either ‘dog’ or ‘wolf’. In the third case, the mtDNA will, again, be either ‘wolf’ or ‘dog’, but the phenotypic appearances could range from pups that look and act ‘doggy’ to pups that look and act ‘wolffy’—depending on the relative proportions of ‘dog’ and ‘wolf’ nDNA that each individual pup inherits from its parent.

Three Questions Addressed

At the beginning of this article, we posed three frequently asked questions related to the genetics of wolves, dogs, and wolfdogs. In this section, we will attempt to provide the answers to these questions.

Q: Are ‘wolf’ genes stronger than ‘dog’ genes, or ‘male’ genes stronger than ‘female’ genes?
A: It is a myth that ‘wolf’ or ‘male’ genes are stronger. Although certain alleles within a gene are dominant and others recessive, dominant alleles do not occur at a higher frequency in males vs. females, or in wolves vs. dogs.

Q: Can genetic studies distinguish between a wolf and a dog?
A: Various genetic studies—most involving mtDNA—have identified wolf-specific and dog-specific DNA markers. This means that DNA analyses may be able to determine whether an individual animal has recent wolf or dog inheritance. We stress ‘MAY be able to determine’ in the above statement for two reasons. First, mtDNA tests can only determine if the animal has ‘wolf’ or ‘dog’ mtDNA. So if the animal in question is definitely a pure wolf or a pure dog, such a test would be able to tell the difference (as if you couldn’t tell just by looking at the animal!). However, it is possible that a high content wolfdog could have ‘dog’ mtDNA—in which case the animal would be considered a pure dog based on this test alone.

Secondly, the nDNA analyses that have been developed so far examine only a very, very small proportion of an animal’s DNA; if an animal has all ‘dog’ genes in the regions analyzed by the test, it will produce a ‘dog’ genotype and would be considered a dog based on this analysis—regardless of the actual dog or wolf content in the animal.

In addition, scientists have not analyzed nDNA from all dog breeds; thus, many more tests will need to be conducted, covering ALL breeds of dog, to conclusively determine whether a particular nDNA marker is actually dog-specific as opposed to wolf-specific as opposed to occurring in both wolves and dogs.

Q: Is there a genetic test to determine if an animal is a wolfdog, and if so, can the test determine what percentage of wolf is in the animal?
A: To date, NO genetic tests have been developed that can determine the amount, or percentage, of wolf (or dog) content in a wolfdog. Due to the overwhelming similarity between wolves and dogs at the DNA level (Dr. Robert K. Wayne’s research suggests that the two differ by only 0.2% of mtDNA), it is unlikely that a test will ever be developed that will be able to conclusively determine wolf percentage in an animal.

Concluding Remark

As we stated at the beginning of this article, many people erroneously believe that wolves and dogs are distinctly separate, one being ‘black’ and the other being ‘white’. However, when wolfdogs are thrown into the mix, ‘black’ and ‘white’ are, in actuality, merely the ends of a continuum. Monty Sloan of Wolf Park put it simply: “There is no black and white in this issue, only shades of agouti gray.”
Leptospirosis outbreaks tough to diagnose
Disease may be caused by proximity to wildlife
By Norma Bennet Woolf

Introduction

Canine outbreaks of leptospirosis in several states are sparking discussion and controversy about vaccination practices for prevention of the disease and concern for transfer of the disease to humans.

Leptospirosis is a bacterial infection cause by a family of organisms known as Leptospira interrogans. Until recently, vaccines were available for only two strains (Leptospirosis canicola and L. icterohaemorrhagiae), but vaccines for two additional types (L. grippotyphosa and L. pomona) are now on the market. Controversy arises because some dogs are allergic to the carrier in the lepto vaccine; as a result, some veterinarians no longer use the inoculant in areas where the disease is not a problem.

Concern about side-effects are relatively new; clinical canine lepto outbreaks caused by L. canicola and L. icterohaemorrhagiae is rare in the US, a situation attributed to widespread administration of the vaccine. The new outbreaks are being caused by L. grippotyphosa and L. pomona, strains that are prevalent in some species of wildlife. The theory is that the disease has entered suburban areas with populations of skunks, raccoons, opossums, deer, and small rodents and that dogs become vectors of these strains through contact with the urine of these animals. Lepto can infect livestock as well, so cattle and hogs that wade or wallow in areas contaminated by the urine of carrier animals can also get the disease.

Transmission

Leptospirosis is contracted primarily through contact with the urine of an infected animal, but can also be transmitted through bite wounds and the ingestion of infected material. People at greatest risk of getting the disease are those who regularly clean up after animals (farmers, kennel owners, veterinarians, wildlife rehabilitators, etc.) and those who swim, wade in, or drink contaminated waters. Since dogs constantly sniff the urine spots of other dogs (and wild animals), they are at greater risk than humans.

Leptospirosis is a disease of tropical and temperate climates, so much of the U.S. is susceptible to potential outbreaks. So far, the states of Florida, Alabama, Georgia, Massachusetts, Michigan, New Jersey, and New York have experienced lepto eruptions and cases have surfaced in many other states as well.

Symptoms, diagnosis, treatment

Leptospirosis bacteria multiply rapidly after entering the body. Signs of the disease can begin as soon as two days after exposure or as long as 26 days after contact with infected urine, but generally occur within one-to-two weeks.

“The severity of the disease can vary widely but it has the potential to be extremely severe, and in fact fatal,” wrote Henry Boer DVM of Pioneer Valley Veterinary Hospital in western Massachusetts. “Symptoms are typical of kidney and liver disease, and can include, fever, loss of appetite, muscle pain, dehydration, vomiting, diarrhea and bleeding. Some dogs will have an increased water consumption and urine output while others may have a decreasing output of urine. Jaundice may occur, and the dog may be painful in the abdominal area or in the lower back. In extremely acute cases, a dog may suddenly go into shock and succumb.”

Toss in fatigue, depression, gastrointestinal upset, difficulty breathing, the potential for meningitis and eye inflammation, and a picture of a diagnostic nightmare emerges. To further complicate matters, veterinarians are unlikely to suspect lepto in the early stages of the disease because the symptoms are variable and lepto caused by previously implicated strains has gone off the screen as a threat in most of the nation. Initial suspicions are often aroused by blood tests that show liver or kidney involvement, and the disease is confirmed by finding the bacteria in a urine sample or in a liver or kidney biopsy.

Once diagnosed, lepto can be treated with common antibiotics such as penicillin, tetracycline, and erythromycin. In advanced cases, therapies to deal with any liver or kidney involvement will also be necessary.

A dog that has recovered from disease caused by one strain of leptospirosis will be protected from disease caused by that strain in the future, but that protection does not cross species. Therefore, the dog will remain susceptible to other forms of the disease. Vaccines to protect against the disease must attack each specific strain in order to be effective. To confuse matters even more, vaccinated dogs can have mild cases of the disease that show few or no symptoms and can shed the bacteria in their urine, thus spreading the infectious agent.

Leptospirosis vaccines may only protect dogs for six-to-eight months, so veterinarians in high risk areas recommend twice-yearly vaccination. Each dog owner should work with his pet’s veterinarian to determine whether the risk of lepto outweighs the risk of reaction to the vaccination and whether the potential for outbreaks of L. grippotyphosa and L. pomona are of enough concern to vaccinate against them as well.

Because of the potential for the disease to cause serious illness in humans and because dog owners want their pets protected, canine and human health professionals are increasing their awareness of the disease, their procedures for prevention, and their protocols for diagnosis and treatment. Medical advances are announced every day, so ask your veterinarian for the latest information about lepto to determine the benefits and risks of vaccination for each pet.

Sources

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2. Carole Bolin, DVM, PhD Research Leader National Leptospirosis Reference Center USDA, Agricultural Research Service National Animal Disease Center Ames, IA 50010; cbolin@nadc.ars.usda.gov; cbolin@nadc.ars.usda.gov
3. US Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases
4. Dr. Henry De Boer Jr.; Working K-9 Veterinary Consultation Service, 738 East Mountain Road, Guilford VT 05301; info@workingk-9vet.com info@workingk-9vet.com

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Puppy Bite Inhibition
By Ann Dresselhaus

Mouthing is a completely normal canine activity that will NOT go away with age, and can become harder and more painful to correct as adult teeth emerge. All puppies mouth, bite, and challenge, some much more so than others. It is up to the owner to define the boundaries of acceptable behavior to the pup as soon as possible. Fully 1/3 of all dogs do not even make it through the first YEAR! with their original owners. The behavior will NOT “wear off” and if one doesn’t do something about it BEFORE the adult teeth come in, I predict the dogs will be ‘relinquished’ to another ‘party’ — which means they will probably die.

Train an Incompatible Behavior

When the pup licks, give it a name like "kisses" and encourage it with high-pitched praise. When the pup uses its teeth on you, make a loud abrupt startling sound (which is a mammalian ‘interrupt’). He will likely be SO surprised that he will stop mouthing, momentarily at least. At the instant he is NOT mouthing (i.e., AS SOON as he stops) PRAISE him as you do for licks. Timing is everything. You want to extinguish the mouthing and REPLACE it with licking. So the rules are as follows:

- When the pup is Licking or 'not biting' — provide lots of gooey praise.
- When the pup uses any teeth — make a large startling sound in his face.

At six weeks of age, a pup should learn in only a few days IF all who interact with him practice it consistently.

Justification

The reason for replacing the mouthing with SOMETHING (licking) is because one cannot usually simply SUPPRESS such strong innate behavior as mouthing. It may keep coming back unless you ‘train’ an incompatible behavior. (You cannot lick and bite simultaneously without biting your tongue.) Sometimes force methods (e.g., squeezing muzzles, etc.) backfire in that they SUPPRESS behavior for a while; however, that behavior comes back full force at unexpected moments. You should use an interrupt to stop the immediate behavior, then use a reward for the CESSATION of the biting.

Train the Humans

Bite inhibition will be much harder to achieve if even one person allows him to bite, so restrict access to those who can implement the above method correctly. Children aged nine or younger are probably incapable of performing these procedure effectively or consistently, so caretakers should keep the younger kids and canines separated until the canine has been bite-inhibited by adults. Sometimes the younger kids’ efforts will weaken your own efforts and confuse the dog. Inconsistency can build frustration and avoidance behavior in canines which can lead to aggression.

Recruit Puppy Playmates

It would also help if the pup had littermates to help him practice bite inhibition. Other pups are the best teachers of all. They will refuse to play if a pup’s bite is too hard. Do not use adult dogs for this since they will allow a much harder bite before correcting — if they correct at all, that is. Find a kindergarten puppy class. It is worth traveling for a good one. A good one would also include off-leash puppy socialization (in an enclosed area, of course).

Some Facts About Leptospirosis

What causes leptospirosis? Leptospirosis is caused by spirochete (or spiral-shaped) bacteria called leptospires. The leptospires live in fluids from infected animals, including urine, saliva, blood and milk.

What are the symptoms? In general, the disease resembles the flu with fever, headache, chills and myalgia (muscle pain).

How is leptospirosis treated? Dogs are treated with a course of antibiotics and with intravenous fluid to overcome dehydration. Diagnosis is based on clinical signs and laboratory tests.

Do humans catch leptospirosis? Leptospirosis is a so-called zoonotic disease that can be transmitted from animals to humans. People can catch the disease from water that is contaminated by infected wild or domestic animals, as well as from more direct contact with animals, such as rodents, raccoons, skunks and cattle.

Why are cats not affected by leptospirosis? Tests for antibodies show that some cats are exposed to the disease, but cats almost never show clinical signs of leptospirosis. Some experts believe that cats have developed a kind of immunity to leptospirosis from their longtime association with rodents.

—Diagnostic Laboratory, College of Veterinary Medicine, Cornell University.
The Pet Lemon Law
By Florida Veterinary Medical Association

Know the Rules

There are two kinds of sellers: Private and Pet Dealer. A “Pet Dealer” is defined as anyone who engages in the sale of more than two lifters per year or more than 20 animals per year — whichever is greater.

Regardless of whether you purchase from a private person or a pet dealer, at the time of purchase:

1. The dog or cat must be at least eight weeks of age;
2. You must be given a completed copy of the Official Certificate of Veterinary Inspection. The Official Certificate of Veterinary Inspection must have been signed by a licensed veterinarian no more than 30 days before your purchase;
3. The dog or cat must have been vaccinated, dewormed, and had certain tests prior to your purchase. These must have been administered by or under the direct supervision of a licensed veterinarian (NOT a private or pet dealer) no more than 21 days before your purchase if your dog or cat is under four months. If your pet is over four months they must be administered no more than one year before your purchase.

Your Pet Must Receive Vaccines and Dewormers

If You Purchase a Dog

If you purchase a dog, it must receive vaccines and dewormers administered by or under the direct supervision of a licensed veterinarian (NOT a private or pet dealer) against the following diseases and internal parasites:

- Canine Distemper
- Rabies, if older than 3 months
- Hepatitis
- Leptospirosis/Parainfluenza
- Canine Parvo Virus
- Bordetella
- Hookworms/Roundworms

If your dog is over 6 months — it must be tested for heartworms.

If You Purchase a Cat

If you purchase a cat, it must receive vaccines and dewormers administered by or under the direct supervision of a licensed veterinarian (NOT a private or pet dealer) against the following diseases and internal parasites:

- Canine Parvo Virus
- Feline Viral Rhinotracheitis
- Calici Virus
- Hookworms/Roundworms

Every cat offered for sale must be tested for Feline Leukemia.

What Every Seller Must Do

All sellers, regardless of whether they are private or a “Pet Dealer” must:

1. Retain accurate records of pets sold and their purchase;
2. Retain copies of the Official Certificate of Veterinary Inspection for each animal sold for at least one year;
3. Allow unnoticed inspection by any agent of the Florida Department of Agriculture and Consumer Services, any law enforcement officer, or any animal control or humane officer. The veterinarian must retain copies of the Official Certificate of Veterinary Inspection for each animal he/she has administered to for at least one year.

You Have the Right To:

- If the “Pet Dealer” misrepresented the breed, sex, or health of your pet, then:
- If within 14 days after you bought your pet from a “Pet Dealer” and a licensed veterinarian of your choosing finds that your pet has a disease or internal or external parasites (excluding fleas or ticks),
- If within 1 year after you bought your pet, a licensed veterinarian of your choosing finds that your pet has a congenital or hereditary disorder, and your veterinarian says your pet was unfit at the time of purchase,
- If the “Pet Dealer” misrepresents the breed, sex, or health of your pet, then:
- If within 14 days after you bought yourpet from a “Pet Dealer”, a licensed veterinarian of your choosing finds that your pet has a disease or internal or external parasites (excluding fleas or ticks),
- If within 1 year after you bought your pet, a licensed veterinarian of your choosing finds that your pet has a congenital or hereditary disorder, and your veterinarian says your pet was unfit at the time of purchase,
- If within 14 days after you bought your pet from a “Pet Dealer” and a licensed veterinarian of your choosing finds that your pet has a disease or internal or external parasites (excluding fleas or ticks),
- If within 1 year after you bought your pet, a licensed veterinarian of your choosing finds that your pet has a congenital or hereditary disorder, and your veterinarian says your pet was unfit at the time of purchase,
- If the “Pet Dealer” misrepresented the breed, sex, or health of your pet, then:

Know Your Rights

Every “Pet Dealer” must provide the consumer at the time of sale with a written notice advising of consumer rights.

The notice shall read as follows:

It is the consumer’s right, pursuant to section 828.29, Florida Statutes, to receive a certificate of veterinary inspection with each dog or cat purchased from a pet dealer. Such certificates shall list all vaccines and deworming medications administered to the animal and shall state that the animal has been examined by a Florida licensed veterinarian who certifies that, to the best of his knowledge, the animal was found to have been healthy at the time of the veterinary examination. In the event that the consumer purchases the animal and finds it to have been unfit for purchase as provided in section 828.29, Florida Statutes, the consumer must notify the pet dealer within two business days of the veterinarian’s determination that the animal was unfit. The consumer has the right to retain, return, or exchange the animal, subject to the right of the dealer to have the animal examined by another veterinarian.

Purchasing Your Pet from a "Pet Dealer," You Are Protected by Law
Problem Chewing: What Can I Do?!?!

By Kim Miles

Have you ever been ready to just throw your hands up in defeat over a dog's incessant chewing? Or gone through numerous pairs of leather shoes? Or regularly had to replace clothing because the holes were in places that revealed a little more than you were willing to reveal?

With problem chewing, we found one rather successful and painless method. It's one I have never seen in the training books, but one that was very successful for us, so I will share our story with you in case it may help you or others faced with a similar situation.

We had a one-year-old rescue come to us that had not been trained or socialized to people, so she stayed inside with us so that we could work with her. We just didn't realize that she'd show such a keen interest in leather.

She went through two purses, my husband's wallet, and about a dozen pairs of shoes. After numerous failed attempts to redirect that behavior and none of the standard training methods working, we were ready to throw our hands up in despair. Instead, I got so disgusted that I finally said, "If she wants them that badly, then she can have them!"

So my husband and I decided to spend the weekend at home, working on her "leather" training. Friday evening we threaded three pairs of those mangled shoes onto a choke chain, which we then threaded through her collar so that the shoes were dangling between her front legs, dragging the floor. She wore these shoes for two days—Friday through Sunday afternoon. (Please, attempt this only when closely supervising your pet.)

Every time she walked, the shoes would sway from side to side like a pendulum, knocking her in the knees. And every time she made a move to mouth the shoes, my husband or I would stop her. Finally, she got so disgusted with having to waddle around with these shoes batting against her front legs that she would knock them out of the way with an irritated kick and lay down very quickly before the shoes had time to swing back toward her legs. She didn't do much but lay around the second 24-hour period.

The result is that she now goes out of her way to avoid shoes, easing around them when she can or disgustedly kicking them out of the way when they are left out. Needless to say, we have had no more shoe or leather casualties here.
Pet lemon laws and nails in the coffin
By Anna Sadler, National Animal Interest Alliance

Enforcement, not new laws is often the key

Cat and dog fanciers have long been their own worst enemies in the breeding ban wars, and the reason for this is the intense love they feel for the pets that they breed, show and that share their homes.

The responsible dog breeder, who spends hundreds — sometimes thousands — of dollars testing his breeding animals for all known heritable defects and carefully chooses a stud that is equally rigorously tested, still feels a personal pain when dogs of his breed are singled out by the media as “genetic time bombs.”

The responsible cat breeder, whose cats are reared with loving devotion and the best of veterinary care, still winces with personal chagrin when a cat collector is exposed as being a breeder of pedigreed cats.

The list goes on. Puppy mills, deplorable conditions, purebred animals abandoned at shelters … the fancier hangs his head in a very personal shame. The breeding ban crowd exploits this mentality at every opportunity. Anyone who has ever sat on a local task force has been subject to the heaping on of collective guilt for the few bad apples that appear in every barrel.

At long last, the data exists to disprove many of the earlier attacks. We now know that the numbers of animals — whether purebred or random-bred — dying in shelters has very little to do with how many are being born, and that purebred dogs and cats account for only 7.3 percent and 0.9 percent respectively of all animals received by shelters nationwide (American Humane Association study data). We know that of those received, purebred rescue groups do yeoman’s work in removing them, rehabilitating them, and finding them new homes.

Faced with this overwhelming evidence, animal rights groups are turning their attention to other issues to exploit. Pictures of one “evil puppy mill” being raided splashed across the evening news is sure to garner truckloads of donation dollars and a new platform on which to launch antibrieding, stiff regulation legislation, from state and local breeder licensing schemes to the recent Doris Day Animal League Petition for Rulemaking before the US Department of Agriculture. Never mind that federal regulations currently in existence, as well as state anti-cruelty laws and local nuisance and sanitation laws, are designed to control those very situations, and the answer lies in enforcement rather than new laws and regulations. Never mind that it is those very same existing laws that are responsible for the mills that are pictured being closed down, showing that they are adequate to the task.

Ever casting about for new ways to use fanciers’ love of their animals and the collective guilt, the anti-breeding forces are marshaling behind yet more and newer ways to tuck the first nail into the coffin of the cat and dog fancies.

One of the primary commandments in the breeding ban bible is to build coalitions with other powerful groups, and what better group to net into their web than the veterinary community? Already reeling from attacks on their own profession, accused of not doing enough to provide their services at low or no cost to neuter every animal on the planet, the animal rights groups consider this group easy pickings.

Pet lemon laws

Enter the current push for “lemon laws” cropping up coast to coast, often with the backing of the veterinary community as well as with the unwitting approval of fanciers. Fanciers even provide input as to what is rational and reasonable by way of consumer protection from breeders whose animals lack the rigid screening techniques and veterinary care of the responsible breeder. Certainly a consumer has every right to expect a healthy pet, backed by reasonable guarantees usually already granted in kitten or puppy sales contracts. “Only the unscrupulous need fear these laws,” fanciers and veterinarians are assured by proponents of this legislation.

These assurances were given to fanciers in the state of Florida. The tap-tap-tapping that can be heard are the nails of amendments to that state’s lemon law being driven into the coffin. What began as the kind of sane and reasonable law that fanciers could and did support, has been amended numerous times since its passage, becoming ever more restrictive and expensive. Cat fanciers report that cost of the requisite certification is currently approximately $75 per kitten, an amount that can rarely be recouped in the sale price.

More to the point, consider the bill introduced into the Louisiana State Legislature this spring. Some reasonable provisions were included in the bill. There was the requirement that an animal sold by a breeder be at least eight (amended to six) weeks old (or if by sales agent or any seller other than the breeder at least 12 weeks), that it be “treated in accordance with all usual veterinary requirements for an animal of its age, including but not limited to, immunization against rabies and distemper.”
Provisions to the Louisiana bill were slipped in by its writers that would require name, address and “breeder identification number(s) be given in writing to the purchaser,” which of course would predicate a need for licensing breeders. Yet another provision would have required that “any person or business which acquires an animal for resale shall have an order signed by a purchaser, requesting that person or business to obtain an animal for that purchaser.”

A written guarantee would have been required for each animal sold, along with printed information about “care, feeding, housing and common potential behavioral and medical problems relating to the specific kind of animal.”

While these above provisions sink in, fanciers can devote some time to musing over the fact that some of these provisions are just and reasonable, and in fact are a common part of their current selling practices, and included in their own contractual guarantees.

But, wait!

Further into the bill’s verbiage is a “right of action” against the seller in case of proof within one year of the date of purchase, that the animal has any hereditary or congenital defect not specifically denoted, as a “current or potential problem” (with the word “problem” left undefined), or contagious disease “verified” as having been contracted before transfer. In that “right of action,” the buyer is granted recompense of “actual damages not to exceed $2500 for “any special care and any medical attention and treatment” resulting from the defect or disease, as well as the option to keep or to return the animal.

When an individual purchases an automobile or a major appliance, he is protected by laws that insure warranty against defects in manufacture. A live animal, however, is not an appliance, and diagnoses of whether certain defects or disease were pre-existing are not nearly so cut and dried as they are in the world of engineering and mechanical devices. This is reflected even in the wording of the Louisiana bill, in which “current or potential problem” defies definition.

Consider that if a puppy goes into a new home and some weeks later develops parvo, or a kitten dies months after purchase to feline infectious peritonitis, proof can be elusive or impossible to determine as to whether the disease was contracted before or after sale. Even in the event that the puppy or kitten does, indeed, manifest a heritable defect at some point during that year, it would be the exception rather than the rule that the breeder or the pet shop knowingly foisted that defective animal off on an unsuspecting buyer.

Note that this bill does not grant the seller the option of either replacing the pet or even of refunding the purchase price. Under warranty the defective automobile would either be repaired or replaced. Instead, the Louisiana proposed $2500 “right of action” clause is nothing short of punitive, and has the potential of destroying even the most responsible breeder.

Lemon laws such as this one and the much-amended Florida law serve to relieve the public of the obligation to exercise even the most elementary consumer discretion in shopping for a pet, and ultimately will serve to work in the favor of the very evils fanciers revile. The person who surfs the Net, pores over consumer report publications, reads warranties and searches for dealers with clean, professional stores when he is shopping for a refrigerator does not perform the same common sense approach when shopping for a living being to share his home.

The answer is not in lemon laws, but in educating the consumer to look past impulse, to never purchase a kitten or a puppy because he “feels sorry for it,” and to make informed decisions. If shelters that routinely collect sometimes hefty adoption fees were faced with the same sort of restrictive legislation, there would be a tremendous outcry. The foundation premise is the same, though: that the consumer is entitled to a trouble-free, maintenance-free pet.

Before fanciers succumb to the collective guilt that drives the lemon laws, perhaps they should call their local shelter and find out what warranty and right of action they would have should they adopt a puppy that later breaks with parvo, or a kitten that later develops feline infectious peritonitis.

This Louisiana bill was passed by the state’s Senate, but killed in House committee. It should, however, provide insight into where the animal rights extremists would like to take pet lemon laws. Instead of nails in the coffins of the purebred dog and cat fancies, bills such as this promise to be the sledgehammers that annihilate them.
Cloning family pet: pet owners seek help from LSU researchers
By Ronald Brown, Press Release

When Dolly the sheep was cloned in February 1997, pet owners who faced the prospect of euthanizing a beloved pet began calling LSU. "Can you clone my pet?" they asked.

Richard Denniston, an instructor in LSU’s animal science department and acting director of LSU's Embryo Biotechnology Laboratory, fielded many of the inquiries. Denniston has been working with cloning techniques in the department since he came here in 1986.

He discussed the idea with others, but the University decided it did not want to take on that particular challenge.

But Denniston, who recently completed a master of business administration degree, did. Thus was born Lazaron Biotechnologies, a business startup that will preserve the genetic material of pets, livestock and endangered species.

Lazaron is one of the few businesses in the world engaged in genetic preservation.

Denniston said there were no others when he conceived the idea, but he was glad to see several others go to market before he incorporated.

"If you're the only business of its kind out there, maybe you don't have such a good idea," he said.

A client wishing to use the company's services has a small skin biopsy of the animal taken by a veterinarian. This tissue sample is shipped in a tissue retrieval kit, supplied by Lazaron, overnight to Lazaron's state-of-the-art laboratory in LSU's Louisiana Business and Technology Center, an incubator for small-business startups on the LSU campus.

The sample is processed and placed in tissue-culture flasks in a temperature- and gas-controlled incubator.

The skin cells, which contain all of the animal's genetic information, grow for approximately four weeks, then are removed from the flask, put in a cryoprotectant solution and frozen in small cryovials.

The cryovials are stored in liquid nitrogen where they will remain viable indefinitely.

When the cloning technology becomes available, the cells can be thawed and used in the cloning procedure.

Lazaron charges $500 for the preservation procedures and $10 a month for storage, Denniston said.

Lazaron is already storing tissue from dogs, cats, cows, horses and even a pet rabbit for clients from Calif., N.Y. and other parts of the country.

The company has a scientific advisory board that provides additional scientific input and serves in an oversight capacity.

The LBTC is part of LSU's E.J. Ourso College of Business Administration, offering space, office services and management consulting to entrepreneurs, inventors and small businesses.

It also offers business planning, marketing, and management assistance. For more information on the LBTC, call Beverly Pourciau at 334-5555. For more information on Lazaron Biotechnologies, call Richard Denniston or Brett Reggio at 334-6988.

This information was obtained from LSU's University Relations Department at http://www.lsu.edu/university_relations/lsutoday/991015/pagethree.html.

The ‘Missyplicity Project’: dog to be cloned
Press Release

The Texas Agricultural Experiment Station at Texas A&M University, and Bio Arts and Research Corporation (BARC) of San Francisco, today announced a joint research project into canine reproductive physiology, believed to be the largest such effort ever conducted.

The goals of this project are as follows:

1. improve basic understanding of reproductive biology;
2. enhance reproduction of endangered species, especially endangered canids;
3. develop improved canine contraceptive and sterilization methods; and
4. replicate specific, exceptional dogs of high societal value.

This project will involve research into cloning of adult dogs, and has already recruited senior scientists from several universities and other institutions, working with a privately-funded budget of $2.3 million for the first two years. This effort is titled the Missyplicity Project, in honor of "Missy," the dog whose DNA will be used to produce the first cloned offspring.

The Missyplicity Project will have a significant positive impact regardless of which project goals are attained. Canine reproductive biology is a seriously underfunded area of science, given that it lacks the commercial interests associated with livestock. Despite limited commercial potential, better understanding of canine reproduction could be directly applied to the repopulation of endangered canids, including many species on the brink of extinction.

Conversely, the knowledge gained from this project can also be used to improve existing and develop new pharmacological methods of canine contraception and sterilization, an important issue in the United States where millions of unwanted dogs are euthanized every year.

Finally, the Missyplicity Project will also facilitate the replication of exceptional individual dogs of high societal value, primarily service dogs such as those for search & rescue. The best service dogs, while obviously well-trained, also possess specific genetic endowments which can only be propagated precisely via nuclear transfer.

The Missyplicity Project is committed to facilitating the necessary technology and information transfers required to realize the project goals, via both commercial and non-profit partnerships, as well as publishing through traditional academic journals.

More information about this project - including the project Code of Bioethics - is available on the Internet at: http://www.missyplicity.com, or by contacting Lou Hawthorne, the Missyplicity Project Coordinator and President of BARC, at 415-646-0417, or by sending an email to info@missyplicity.com.

Anyone interested in speaking with Dr. Mark Westhusin, the Principal Investigator for the scientific team, should contact Texas A&M University Relations at 409-845-4644.
Audubon Institute pioneers breakthrough in saving rare animals

Press Release

New Orleans, LA — In an effort to boost the dwindling numbers of the world’s endangered small cats, a domestic housecat has given birth to a completely different species of cat known as the African wildcat. The kitten, named Jazz, is the result of the world’s first successful inter-species frozen-thawed embryo transfer, a project conducted by the Audubon Institute of New Orleans, Louisiana.

The birth on November 24, 1999, at the Audubon Institute Center for Research of Endangered Species marks a major breakthrough in the field of assisted reproduction technology for rare and endangered species.

"More animals will become extinct in our lifetime than at any other time in the history of mankind. If mankind is responsible for this extinction, then we also have the responsibility to act on behalf of these species," said Ron Forman, CEO of the Audubon Institute. "We at Audubon Institute are developing technology to freeze and stockpile reproductive material, using common, non-endangered animal surrogates to increase the birthrate for endangered species, until those species are threatened no more. This science is a major step towards eradicating extinction."

Wildcats are among the smallest of the exotic cats, ranging in weight from three to eight pounds, about the size of a housecat. Because of their close relationship and similarity in size, African wildcats are an ideal species for interspecies embryo transfer with the domestic cats. Once numerous, some subspecies of wildcats have gained protected status as habitat encroachment threatens the domestic cats. Once numerous, some subspecies of wildcats have gained protected status as habitat encroachment threatens their populations. Three female and one male African wildcats are housed at the Research Center.

The birth of this wildcat kitten is the latest in a series of projects pioneered by Audubon Institute’s Senior Vice-President for Research, Dr. Betsy Dresser, and Senior Scientist, Dr. C. Earle Pope, world-renowned leaders in the field of assisted reproduction technology for endangered species. In 1989, Drs. Dresser and Pope led the team that produced the first successful Indian desert cat birth to a domestic housecat, a procedure which utilized a fresh embryo. Drs. Dresser and Pope also led the team that produced the world’s first test tube gorilla in 1995. Recent accomplishments at the Audubon Institute Center for Reproduction of Endangered Species in New Orleans include the births of endangered African servals, saddlebill storks and Mexican grey wolves through natural breeding, and the hatching of twenty-nine Mississippi sandhill crane chicks through artificial insemination.

At the Audubon Institute Center for Research of Endangered Species, Dr. Dresser and her staff have created an impressive “frozen zoo”: reproductive material from endangered and rare species which can be preserved, perhaps for hundreds or thousands of years, in tanks of liquid nitrogen. Researchers are working on a number of embryo transfer projects involving big cats, bongo antelope and other animals. By using non-endangered surrogates for gestation and baby-rearing, endangered and rare animals can produce reproductive material at a more rapid pace, resulting in more births.

Dr. Dresser holds the Virginia Kock endowed chair in endangered species conservation at the University of New Orleans. Dr. Dresser and her staff work in close collaboration with the University of New Orleans and Louisiana State University on projects dealing with assisted reproduction for endangered species.

The Audubon Institute is based in New Orleans, Louisiana. Under the leadership of CEO Ron Forman, the Institute is a not-for-profit organization which includes nine highly-acclaimed facilities and museums dedicated to nature: the Audubon Zoo, the Aquarium of the Americas, the Entergy IMAX® Theatre, the Louisiana Nature Center, Audubon Park, Woldenberg Riverfront Park, Wilderness Park and the Freeport McMoRan Audubon Species Survival Center. The Audubon Institute Center for Research of Endangered Species, the research arm of the Audubon Institute dedicated to innovative breeding techniques for rare and endangered species, opened in 1996.

Jazz, the first animal ever born from an inter-species embryo transfer utilizing a frozen-thawed embryo, will be on exhibit at Audubon Zoo in early 2000. [For more information on the Audubon Institute of their research, go to http://www.auudoboninstitute.org.]

Funny Woof Tales

A new section has been created in the Florida Lupine News that will allow for more member input. We invite all of you to write to us about the silly antics and escapades of your wolfdogs. We all know that they are brilliant, resourceful and cunning critters, so let’s share with each other some of their amazing tales. Please send or email your stories to editor@floridalupine.org or to the address provided on page two. (Names of animals and/or owners are disclosed ONLY with permission of the owners. If you wish to use an alias for the newsletter, that can be arranged.)

Joombie’s owner wrote to us with this amazing tale. Joombie, typical of many of our Floridian woofers, comes in after a hot summer afternoon of fun and adventure, both hot and tired—all 115 pounds of him. He wants nothing more than some cold ice water to rejuvenate, so he heads straight to the automatic ice and water dispenser on the refrigerator, and he pushes the appropriate lever for whichever one he desires: ice or water. He knows which is which and often dispenses ice to his buddies while he drinks his fill. If they are thirsty, he will push the water lever and let them drink with him. Now, that’s a smart wolfdog!