

## **Statement in opposition to registering the Dalmatian-Pointer descendants**

The question of whether or not to register the descendants of the 1973 Pointer-Dalmatian cross is once again before the DCA membership. We ask only that members do their homework and then vote according to whether you believe that registering these dogs at this point in time is in the best interest of Dalmatians.

### **Background**

Genetic backcrossing was introduced to the Dalmatian world in 1973 when Dr. Schaible, a PHD geneticist and Dalmatian breeder launched an experiment designed to transfer the gene for uric acid metabolism from a Pointer to a Dalmatian. The goal was to create a strain of Dalmatians that would retain breed type but convert uric acid to allantoin like Pointers and other breeds, the assumption being that Dalmatians who no longer excreted high levels of uric acid would not form urate bladder stones.

The first part of the experiment was successful. Some Dalmatians today carry the gene responsible for typical canine uric acid metabolism and excrete low levels of uric acid. But the second and related assumption, that lowering uric acid would prevent the formation of urate bladder stones in Dalmatians, remains unproven 37 years after the initial experiment.

It is unfortunate that the early backcross experiment didn't include any of the US stone experts. Having clinicians as well as geneticists involved during the initial work would have defined the problem more accurately, and might have avoided the ongoing confusion caused by the tendency for some to conflate and equate the excretion of high levels of uric acid with the actual forming of urate stones. This is something that many of the studies and discussions promoting backcross continue to do despite repeated attempts to correct this misperception by the recognized experts in the field.

### **The issue of registering the backcross descendants hinges on the answers to 5 basic questions:**

1. Is the formation of urate bladder stones a significant problem in the breed?
2. Is backcross science a reasonable method for dealing with this health issue?
3. What are some of the risks and benefits associated with this registration issue?
4. Are there other effective methods available for eliminating urate bladder stone formation in Dalmatians?
5. How does backcross science affect the issue of purity?

### **Is the formation of urate bladder stones a significant problem in the breed?**

At this time there are no peer reviewed studies that state an incidence or prevalence of urate stone formation in the general population of Dalmatians. None! Studies and surveys report percentages ranging from less than half of 1% to a high of 34%. Please note that these studies claim only to represent their survey populations, not Dalmatians in the general public. Anecdotal information from breeders and Dr. Bartges' DCA study indicate that the incidence varies from region to region and from bloodline to bloodline, and that management issues and environmental factors play key roles. Dr. Carl Osborne who is considered the leading expert on the subject of canine stones reports 23 predisposing risk factors for Dalmatian bladder stones, uric acid being one among these 23. Interestingly, European surveys do not vary nearly as much as the American ones, averaging around 2%

The severity of the medical condition for the Dalmatians that progress into stone forming also varies. Some require surgery while others are dissolved with medication, diet and management changes. At the time of the original backcross, surgery was generally the only option. Today most stones are dissolved through a combination of drugs and management therapies.

The Bartges' DCA study suggests that between 50-60% of Dalmatians that form a stone never form a second one.

We believe that the prevalence of stones in the breed is closer to the European estimates and that it's shrinking, while the treatment options available today have greatly reduced the seriousness of the condition when it occurs.

### **Is backcross science a reasonable method for dealing with this health issue?**

The answer to this question is unknown because no research has been conducted to assess the effectiveness of using backcross science to eliminate the formation of urate stones. The backcross experiment proved only that the Dalmatians that received the gene for typical canine-uric acid metabolism do convert uric acid to allantoin before excretion. At the time of the original experiment, it was commonly assumed that uric acid was the cause or at least the primary cause of urate stone formation. The leading US canine stone experts, Drs. Bartges and Osborne, do not support that view, instead asserting that since all Dalmatians excrete high levels of uric acid, more than a small portion of Dalmatians would develop stones if uric acid was the cause. Dr. Bartges hypothesizes that crystallization inhibitors and promoters which have been discovered in humans, could be one difference between stone formers and non stone formers. Again, Dr. Osborne has identified 23 predisposing risk factors.

### **Are there risks and benefits associated with this registration issue?**

In order to assess the suitability of registering the backcross dogs, several issues need

to be examined regarding their health status and breed type as well as the effect of their registration on AKC, AKC's registration policies and precedents; the DCA and conscientious Dalmatian breeders.

Unfortunately there is little information available about the health and longevity of the backcross descendants. Dr. Schaible viewed the original Pointer-Dalmatian cross only as a breeding experiment, not as a research project, so he did not keep traditional scientific records. This is also true of those who maintain today's backcross breeding program. Their public statements suggest little interest in monitoring the health of dogs they've placed. For a project aimed at eliminating urate stone formation in Dalmatians, this is a serious shortcoming because the onset of stone formation is almost always well into adulthood. The result is that we have very little information about the longevity of the descendants, or about their incidence of stone forming or other diseases or causes of death. Dalmatians are very healthy compared to many breeds, with a low incidence of cancer and several other common diseases. It would be useful to know the incidence of these diseases or other health-related conditions in the backcross breeding program but that information is not available.

With the exception of the spotting weakness associated with backcross, the backcross Dalmatians appear fairly typical, but it should be noted that we have only seen the backcross descendants selected by their breeders as the keepers. It would be more informative to see all the littermates from several litters and especially useful to see the offspring from several UU x UU matings.

Their focus is on uric acid excretion only, and as a theoretical sole cause of uric acid stone forming. In other words, for the backcross advocates, the experiment was complete when the Pointer gene was introduced into the Dalmatian.

Interestingly, over the past 37 years and especially in the last few years, arguments for registration have shifted from assertions that registering these dogs would improve the health of the breed to arguments that these dogs should be available to private breeding programs. It should be noted that AKC registration is not required for that.

Maybe the DCA membership would support registration of the backcross descendants for such a purpose, to enable some breeders to gracefully segue out of an afflicted line. But if that's really the purpose of seeking registration, the conversation with DCA, AKC and the AKC Health and Welfare Advisory Committee needs to center on the merits of these goals; for they are different than goals expressed more prominently.

As for registration issues, the AKC has general registration policies and a policy for dealing with single breeds. Registering these dogs violates many of the existing policies: First, AKC has no policy for registering dogs with broken lineages like the backcross dogs. Before registering dogs with broken lineages they should adopt a

policy that fully articulates how and under what circumstances such registration can take place. Accepting them without such a policy in place would set a dangerous precedent and raise legitimate concerns among breeders and parent clubs. Second, the policy for dealing with a single breed outlines the circumstances under which AKC will consider opening the studbook. The requirements include a finding that a serious health problem exists and that it is getting worse. Even if AKC concludes that bladder stones are a serious health problem in the Dalmatian (a problem in itself because doing so would set too low a threshold for using genetic science), there is not a shred of evidence that the problem is worsening. The policy also says that AKC gives great weight to the wishes of the parent club. In this case, the request was presented by a non DCA member and a faction of the parent club after losing a properly conducted vote of the full DCA membership on this very issue.

Finally, some of the claims made to justify the registration of backcross dogs have been misleading and harmful to the breed and DCA.

### **Are there other effective methods available for eliminating urate bladder stone formation in Dalmatians?**

Dr. Bartges wrote that because all Dalmatians excrete high levels of uric acid but only a small number form stones, some other cause is involved. He believes that when the cause(s) are discovered, breeders should be able to select away from the problem. We agree!

The huge variation in estimates of breed wide prevalence from active breeders suggests that factors other than uric acid excretion play major roles in stone formation. Put another way, the proponents and opponents of registration may be looking at wholly different circumstances. Some backcross advocates allege that about 20-30% of male Dalmatians will suffer from urinary blockage sometime during their life. To those of us who oppose registration, this claim seems truly inconceivable. But if it's true for breeders in a given region, it is an extreme outlier; and proves the point that there's much more to stone formation than uric acid. It also provides an opportunity to investigate the role of other environmental and hereditary factors.

To long-time Dalmatian breeders, the discussion about bladder stones and uric acid is reminiscent of debates over Dalmatian deafness 40 years ago. At the time some breeders argued that Dalmatian deafness could not be reduced because of its linkage to the white coat. But even then, before learning that many Dals were unilaterally deaf, good observers noticed differences in the offspring of different sires and dams and whole breeding programs and took advantage of those differences. That's what good breeding is all about.

## **How does backcross science affect the issue of purity?**

Some observers suggest that because the backcross Dalmatians are about 99.7% pure, Dalmatian breeders should have no worries about their purebred status. In fact, that precise issue has never been a primary concern of many Dalmatian breeders who oppose registering these dogs.

Looking at the issue from a related but slightly different perspective, though, it's worth mentioning that geneticists, including members of the AKC Health and Welfare Advisory Board, have written that dogs have 99% of their genes in common, that it's the genetic material in the remaining 1% of the canine genome that separates them into distinctly different breeds.

That is not a little matter to someone who dedicates a big part of their life to preserving and caring for a particular breed. What appears as a miniscule fraction of the canine genome is a huge percentage of what distinguishes our breed from others. As protectors of our breed, it is our duty to guard those factors that make a Dalmatian a Dalmatian, and with facts, not unproven theories.

One of those breed-specific factors is spotting and there is no question that it is impacted by the transferred gene. Drs. Schaible and Bannasch have written that the uric acid transport gene in question is located near the T locus for ticking. This is a gene that plays a huge role in spotting – a distinguishing characteristic of the Dalmatian breed. In 2005, Dr. Bannasch wrote that the LUA dogs generally have smaller, less defined spots than Dalmatians. Many long-time Dalmatian breeders note the same spotting defect, saying that they can recognize a backcross Dalmatian by spotting alone, even at a distance.

Someone suggested that breeders who oppose registration must care more about spotting than health, but such a statement represents a total misunderstanding of the issues. Most breeders rarely if ever encounter a stone forming dog today, and therefore see no reason to swap their dog's spotting for an unproven cure they don't need. Moreover, while breeders recognize that there are some hereditary aspects to the formation of bladder stones, they also realize that most problems can be prevented by simply avoiding liver and other foods that are rich in purines; by adding lots of water to their dog's dry dog food, and by providing access to the outdoors so dogs can urinate when needed. These are not tough management issues!

Finally, good dog breeding is a labor of love as well as a science. Those of us who have lived and worked with Dalmatians for many decades are very fortunate. We have been able to see our efforts transform a breed with serious temperament problems to a breed that is highly stable and outgoing; from a breed with a high incidence of deafness, severe skin problems and bad bites to a breed where all of these problems have been

reduced. Dalmatians are long-lived and suffer from few of the more debilitating and tragic diseases that other breeds face. When considering this issue, please remember that none of these improvements happened by accident. They happened because of the dedication and hard work of breeders, and the resources provided by the Dalmatian Club of America. Over the last several decades Dalmatian breeders have carefully evaluated their breed and set priorities for making improvements. They studied pedigrees and visited shows and kennels to select dogs for their programs. They educated themselves about genetics, dog care and husbandry issues. They tested progeny and used the scientific tools available to make sure that their selections were sound. In short they have achieved their mission as outstanding dog breeders: They have preserved and improved their breed.

Until we have more information about the backcross dogs, about the true prevalence of stone formation in the breed, about the relative effectiveness of backcross science in eliminating it, registration is premature. You can't solve a problem until you can properly define it and this problem has not yet been defined. Deafness is the most significant and heart breaking health problem within our breed and Dalmatian breeders have faced it head on. We have held nothing back and provided vital inroads to reducing the incidence of deafness not only in Dalmatians but also in scores of other breeds. Dalmatian breeders, known among other breeds as the pioneers in deafness research, are not afraid to stand up and be counted if it improves the health of our breed. No one among us would deny our dogs better health even if it was just for a few. Dalmatian breeders will embrace the stone disease issue when it's proven. That's our character and history.