## Breeding for the Difference by Dr. Carmen Battaglia



Most people think and act within the narrow limitations of what they have been taught during their early years as a breeder without ever questioning the basic assumptions that structure their world as a breeder. Because technology has become a tool of the breeder, it is important to stop periodically to see if we are experiencing a slippage in our values. This is an area that no breeder can afford to ignore, for no one should move too far from his or her breed's standard when selecting sires and dams.

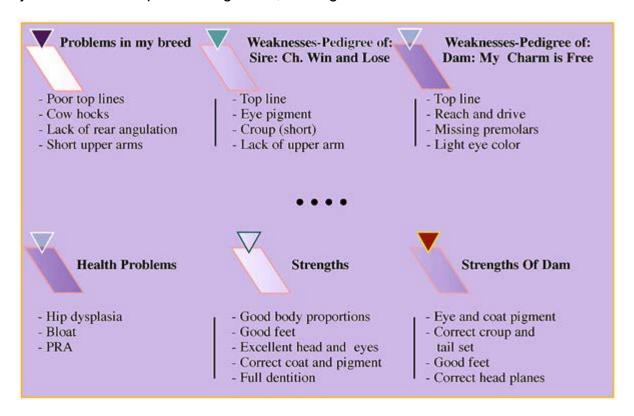
Thus, when it comes to breeding for the difference, there are always more than enough problems to worry about. The key to success is staying focused on the important issues. Too often, it is the problems of least

importance that are given more time and attention than they deserve. In practice, no breeder can realistically focus on every problem. This means that choices have to be made. In this regard, one of the worst dilemmas comes when a breeder discovers that they do not know what problems exist in their breed. This will be closely followed by not knowing what problems exist in their pedigrees.

At the end of the day, how much progress a breeder will make can be linked to the learning of three skills: how well they understand their breed standard; knowing the modes of inheritance that effect the traits they intend to eliminate or improve; and whether they can identify the strengths and weaknesses that are present in their pedigrees. In this regard there are several factors that separate breeders from one another. Some will know more about the ancestors in their pedigrees than others. Generally, it will be those in the first three generations. Others will only study and use champions in their breeding program. Those with the least experience will concentrate on only breeding to the dogs with health certifications (OFA, CERF, etc). This is usually because they do not understand how to interpret their breed's standard or how to manage the carriers. Then there are those who believe that producing one good puppy or a champion will make them successful. In the end, most of these reasons will not be good measures of anything, given what is known about breeding methods and genetics. For example, one good pup in a litter of faulty littermates is not progress. A worse situation is for the pups to be of such poor quality that they must be sold on spay/neuter contracts or on limited registrations.

In order to know whether a breeder can make a difference or whether they are able to make improvements begins by taking a closer look at the qualities found in the litters they have produced. This begins by focusing on the core elements, which are health, conformation and temperament. Quality and soundness are the proven measures of progress and they are the factors that make the difference. In this regard, everyone is not equal. Some breeders will start out with better dogs than others. Some will know more about how to pick and choose the best offspring. Some will know which breeding method to use for each sire and dam. Some will have more breed knowledge and better networking skills. While all of these factors are important, until a breeder understands what strengths and weaknesses are embedded in their pedigrees, not much can be done. In practice, every dog has some traits that need improvement. This is true even among the better individuals. Ask this question, "is there one trait or characteristic you would like

to fix or improve in the dogs you are considering to breed?" It is not enough to know the breed standard and which traits are to be faulted and disqualified. To breed better dogs, one most know the modes of inheritance for each trait. The mode tells the breeder how a trait will be inherited. Of all the things that can go wrong, one of the worst problems is to not know if the recessive genes are producing the problems or whether they are the result of poor management, training or nutrition.



Unfortunately, there are no reliable estimates for the frequency of problems that occur in each breed. This forces breeders to develop their own list of problems to worry about. One technique that works is to begin with a sheet of paper that has two vertical lines drawn from top to bottom. Space them wide enough so they will form three columns. Over the first column write the words, "Problems in my breed". In this column, list the traits and diseases considered of greatest importance to your breed. They might be size, short upper arm, small eyes, temperament or a specific disease(s). For example, in Dalmatians and German Shepherds, it might be color, temperament, topline, upper arm or some disease. In other breeds, it might be body proportions, shyness, lack of angulation, etc. The list could be long, but in every breed there will be at least four important problems that are more important than all others. They should appear at the top of the list.

Identifying problems on paper first helps to focus and direct a breeding program by keeping things in perspective. It also serves as a reminder of what problems are present and what should be given a priority. The exercise of writing things down about the strengths and weaknesses of the sire and dam should be done before making the decision to breed them. This exercise also helps to clarify and highlight what

specific strengths and weaknesses are involved between the breeding partners. One of its by-products is that it helps to identify the difference that exists between the breeding partners. If the strengths and weaknesses of each breeding partner do not offset each other, it makes little sense for the breeding to take place. It makes less sense to worry about improving coat quality or color if structure, temperament or health are the problems. In the example used in our chart, notice that both the sire and dam have poor toplines. Unless they both have littermates and ancestors with correct top lines it would be difficult to justify this breeding because it is likely that these two dogs will concentrate the genes needed to produce a litter with poor top lines.

Another common mistake is to place emphasis on only one trait. Those who do not consider the total dog, meaning the core traits (conformation, health, and temperament) will find that over time, the quality of their pups will soon begin to drift toward the breed average. In time, their pups will begin to show all of the variations found in their breed.

In the final analysis, how much of a difference a breeder will make in his or her breeding program will be directly related to how well these principles are understood.

## Reference:

- Battaglia, C. L. "Punnett Squares", Canine Chronicle, Vol. 27, No 8. Pg. 188-120, 2003
- Battaglia, C. L. Breeding Better Dogs, BEI Publications, Fifth Edition, Atlanta, GA 1986Bell, Jerold S. "Choosing Wisely", AKC Gazette, August 2000, Vol. 117, Number 8, p-51.
- Bell, Jerold, S. "Developing Healthy Breeding Programs", Canine Health Conformance, AKC Canine Health Foundation, Oct. 15-17, 1999. St. Louis MO.
- Foley, C.W; Lasley, J.F. and Osweiler, G.D., "Abnormalities of Companion animals: Analysis of Heritabliliy", Iowa University Press, Ames, Iowa, 1979
- Hutt, Fred, Genetics for Dog Breeders, WH. Freeman Co., San Francisco, CA, 1979
- Willis, Malcolm, Genetics of the Dog, Howell Book House, New York, New York, 1989
- Willis, Malcomb, "Breeding Dogs" Canine Health Conference, AKC Canine health Conference, Oct. 15-17, 1999. St. Louis, MO.
- Willis, Malcomb, "The Road Ahead", AKC Gazette, August 2000, Vol. 117, number 8, p-47.