

WHITE PIGMENT INDICATES LETHAL GENES?

BY: E. GEORGEAN RAULSTON

An article came to my attention recently which erroneously tied two unrelated areas together (genetically speaking). The premise was scientifically unsound, illogical, and impractical. The paper was unconfirmed using any worthwhile study using experimental and control groups.

The object of the paper was to point out that somehow white pigment (such as on a half-masked or white eared dog) indicated albino tendency which further indicated lethal genes which caused short life.

After reading the article, I reread several paragraphs from my books on the subjects. Afterward I consulted with my husband. Finally, I dug through my files and found the letters I had received from four University Veterinarian professors on "blue eye color in one eye". Let me give you the sum of that research plus one of the breed history.

If the presence of white pigment meant "lethal gene" then we would all run from such breeds as the Maltese, Great Pyrenees, Samoyd, etc. The white headed Old English Sheepdog would be fatal. There is absolutely no more danger to the white tip of ear or the half-masked coloration than there is to the necessary white markings; white muzzle, white chest, white feet and legs, and white tip of the tail.

The paper I refer to, "Cull or Kill," did not take into account that the Saint Bernard was at a time less than a hundred years ago as often white as yellow-brown to brindle. The photographs and paintings on the dining room wall of the Hospice show white headed and half-masked Saint Bernards -- proudly. The original famous "Barry" was extremely white of pigment.

We are standardizing markings on a "favored" basis after all other characteristics drawn by the standard are met. The pure white headed Saint Bernard is no more in the dire trouble than any other white dog other than our standard outlines a dark "mask" as favored. Mind you, the standard says "dark" not black. The darkest color allowed on the Saint Bernard according to the standard is "brindle". A third color on the Saint Bernard is not allowable whether black spots, ticking or black on the top of the head or on the body. Black tips to the hair and through the coat give a brindle effect which is allowable. White is allowable according to the standard, black is not. The Siberian Husky is allowed two blue eyes, or one brown and one blue, or particolored. The Merle Collie is not considered to have lethal genes because of his eye pigment. These are all working dogs who can function with no difficulty because of a blue eye, nor are they considered as hosting lethal genes as a result of the coloration.

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There is no reason the Saint Bernard with white on his head or with a white muzzle band should have pink lips. The Great Pyrenees, Samoyed, Maltese and other white dogs or dogs with white markings have black lips. It has never been established that the loci of the allele influencing lip pigment on the chromosomal bar is in any way connected with the genes which influence coat pigment. In fact, we do not know what a true dominant in the dog is in most cases. We don't know in fruit flies where fast maturity and inbreeding make far more experimentation possible. The truth is, genetics is a young science with more to be answered than we know. Much has been learned, surely. Just at this point there is more theory than has been proven in a practical plan.

Four major universities answered the blue eye problem this way: (1) "There is no reason to believe that blue eye color or a spot of blue on the eye is detrimental in the least." (2) "Genetics of the eye and its color is still very fuzzy." (3) "There is no reason to believe that a blue color spot on the eye is hereditary." (4) "There is no reason to believe that blue eye pigment on the dog is any more serious than blue eye color in the human."

As for the tendency toward Albinism or any relationship to longevity to the Albino, I would suggest that attention to type and quality might improve the breed far faster than basing breeding programs on common stock supposedly long lived. Longevity is based on such complex factors that books have been written (bases) on the study with still no conclusive evidence of whether or not longevity is really an inherited trait. Such organs as lungs, heart, entire visceral structure and system, endocrine system, nervous system ALL influence longevity. White pigment has nothing to do with longevity or the Albino. AN ALBINO IS AN ORGANISM TOTALLY LACKING PIGMENT. White is a color (pigment). Albino's have almost without exception pink eyes or colorless eyes sometimes considered light blue- actually, they are colorless for the most part. Again, white is a pigment. Place an Albino rabbit next to a white rabbit and there is some difference. Albino humans are not necessarily shortlived due to the fact they are Albino's just as a human is not necessarily considered short lived because he has blue eyes. The only complaint Albino humans have is light and sun sensitivity which effects eyes and skin. They learn to cope with it by protecting their eyes and skin, have perfectly normal children and life goes on.

The "Hospice Ear" is thus named for good and sufficient reason. The half-mask is certainly not a phenomena to the breed. Bonafacius van Platitude was the top winning dog in Europe prior to WW2 and he had a white head - he was also magnificent.

All breeders wish to conform to the slightest suggestion of the standard. However, if that is so they will first attend to type of head, the description of body; Massive, tall and balanced, extradinarily muscular, powerful, etc. An attempt to theorize to the point of tying white ears and half-masks to lethal genes which cause short life for the breed goes beyond imagination.

It is enough to say that we are always breeding toward the ideal; however, if all of the fine specimens of the breed had been discarded for one "favored" though not necessary, bit of marking, the breed would be in worse trouble than it has been. The Saint Bernard is not made a member of the breed through marking, he is a Saint Bernard because he meets his standard for head type and power of overall anatomy capable of performing his breed function. He ALSO should be white with red or red with white, the red in its various shadings; brindle patches with white markings. The colors red and brown-yellow are of entirely equal value. Necessary markings are: white chest, feet and tip of tail, nose band, collar or spot on the nape. Never of one color or without white. Faulty are all other colors, except the favorite dark shadings on the head (mask) and ears. The standard calls a blaze "very desirable".

White pigment, half-masks, white ears indicate nothing more than we haven't gotten the genes on marking as stable as we wish. We are dealing with a highly complex sort of genetic color pattern. With the background of the breed, it may take a long time more, if ever, to stabilize markings. Why fight the problem when we have so far to go before standardizing head type and anatomy?

We have all seen beautifully marked mantles and splash coated dogs who fit the collie standard beautifully. Regrettably they were registered Saint Bernard. Have you ever noticed how the best pup in the litter comes out of a half-mask? The reason certainly can't puzzle us when we consider that many of the greats in their ancestry had the same problem - if, indeed, one considers it a problem. Given two equal dogs, the dog with the "favored" marking would have to win- that's about all it means when it is judgement time. First to consider are type and quality which implies fine balance head and body and movement correct for the breed and the function of the breed.

I suggest the article "Cull of Kill" is without authority, not based on research, not based on a thorough knowledge of the breed, not based on canine genetics as a whole, without basis of documented fact and, in short is not accurate to the point of being misleading and detrimental to the breed.