Introduction

The problem many racing pigeon fanciers have with the subject of genetics is figuring out how to apply it in their lofts.

Ten years ago I wrote a series of articles on the use of genetics as a tool in breeding better racing pigeons. It has been published in a couple of magazines including "Winning". I have been asked several times to write more articles on the subject, but to be perfectly frank, I could never figure out what else to write. I said just about everything that I had to say in the original article. It didn't seem to make sense to write another article that said the same thing and I could never come up with new material.

I have been breeding animals for over 45 years, practicing my craft on dozens of species ranging from bacteria, viruses and flies to swine, rabbits and racing pigeons. I first became interested in the subject of genetics as a young lad when I realized that with my gelding horse, all I did was pour in hay and haul out manure. The only future to my substantial investment was that some day the horse was going to die and then I was going to have to bear the expense of its burial. With that realization, I sold the gelding and bought two pair of Angora rabbits. Within a few years I had more rabbits than you can possibly imagine and I was hopelessly hooked on what would eventually become a career in animal breeding. Along the way, I received a degree in genetics from the University of California and spent a few years in research and the emerging field of genetic engineering before settling into the very practical world of pig breeding. I have never taken any psychology classes and so I am completely unaware of any psychological disorders my compulsive obsession with animal breeding might represent. To me it is just a lifelong passion that I have been fortunate enough to be able to pursue with few boundaries.

Despite not having any new material to write, I have always been a little puzzled by the questions and inquiries people have sent to me over the years since the articles were first published. The questions are always reasonable, but why didn't they know the answer from reading the articles? It was all covered. The truth you must understand is that the application of genetics to animal breeding isn't that difficult. It is more about passion and energy than difficult formulas or secret algorithms. I had quite a laugh with "Book" Richardson's recent contribution to "Winning" wherein he described being banned from the family living room because of all the eraser particles he generated when planning his matings for the next year. THAT is the application of genetics to pigeon breeding!

Well, at the prodding of "Book" Richardson and Steven Van Breeman, I am going to try to write another series of articles. To those of you who read them and say, "but he isn't saying anything new", congratulations. You get it and I agree. But for those of you who are still sorting out this subject, I will attempt to present my views on the material in smaller chunks and with more examples. I encourage you to email me your questions. I may not have the time to answer all of them directly, but they will help to guide me in the areas where you are seeking more information or clarification.

For those of you who are still "sorting out this subject", I need to share with you the difficulties I had in mastering one of the prerequisite subjects (chemistry) for my genetics degree. There are two points to this story. First, I did not come to an understanding of genetics overnight either (and certainly not after reading a single article) so I do not mean any disrespect to those of you who are still struggling with this topic. Second, my eventual mastery of both chemistry (described below) and genetics came from repeated exposure to the same material and ongoing challenges to what I **thought** I knew and understood.

When I was in college, I was required to take quite a bit of chemistry - a dozen or so different classes. The first one was really easy. It was a complete repeat of a year of high school chemistry condensed into ten weeks. I sailed through with an "A" and not much work. I viewed myself as pretty darn good in chemistry. The second course was a disaster. It started out well. The first week was a repeat of the first course, but for the next nine weeks, everything was new and presented at a very brisk rate . I passed, but only with a "C" and with great effort at that. The third course was even harder. Again, it started out with a review of everything we were suppose to know, and then proceeded to bury us with new concepts. The wrinkle in the third course was that the exam questions shifted from us feeding back what we had been fed in the lectures and labs to questions that required us to apply what we had learned to new situations. I will never forget the final exam for that third class. I really thought I had gone to the wrong room for the exam. There wasn't a single question on the exam that was like anything we had seen anywhere that whole year in the texts, in the lectures or in the labs. I passed that one too, but again with a "C" and probably a low one. Three years later and nine more variations on this theme, I had a very solid understanding of chemistry. In part it was because the material was repetitively presented, each time in a slightly different perspective. Also though, it was because I was repeatedly forced to apply the material in new and unfamiliar situations. Things I thought I knew in that first course were exposed in later courses to be much more complicated and to continue, I had to expand my understanding.

One last detail before we get started. Genetics is one of those subjects about which people sometimes can get pretty excited. It is right up there with politics. I am writing these articles because this information has been useful to me and I have been asked to

share it with the readers of "Winning". I am not trying to win converts to my way of thinking. There is plenty of room in the world and in this sport for differing opinions. This is what I have successfully used for many years in several species. And while I claim to know more now than I did 45 years ago, I know that I understand but a fraction of what we call genetics.

Genetics is Just a Tool

During my years in Ohio, I lived in an area that had quite a few Amish families. I hired them on several occasions to help with various barn building and remodeling projects. They are master craftsmen! With only hand tools they can build a barn that will last for 200 years or kitchen cabinetry that is as fine as you will find anywhere. Contrast that image to what I found one day when I returned home from work. Our four year old was in the garage beating the tar out of a 2x4 with the claw end of a hammer. "What are you doing?", I asked. "Cutting the board in half."

Genetics can be thought of as a set of tools. One of several sets the animal breeder has at their disposal. Just as my son needs more than a hammer to build a barn, the breeder who only uses the formulas and data of genetics will very likely be extremely disappointed in the end. On the other hand, the breeder who masters the essential tools and applies them as a craftsman, can breed anything he or she sets their mind to accomplish. Remember though that in addition to having the essential tools, a craftsman must know both *when* to use them and *how* to use them skillfully.

I will begin this series of articles in the next edition of Winning with a discussion on one of the most powerful of all the genetic tools, linebreeding.