The Biggest Secret

When I was a boy, my father came home one day with an LP (one of those now extinct 16 inch vinyl "long playing" record disks). He had borrowed it from a good friend of his who was an insurance salesman. The record was called "The Strangest Secret" and it was recorded by Earl Nightingale. Nightingale had been interested in why some people are successful, but most are not. His conclusion and the thesis of the record was that "people just don't think". Instead they proceed through life on auto pilot, content to end up wherever life might take them. He likens it to being on a ship, but never defining a destination – just drifting about wherever the winds and currents might take them. More often than not, they never get out of the harbor! It was an excellent record and it had an enormous influence on my life. You can still find it today on eBay. Forty plus years later, I still listen to it at least once a year.

There are quite a few parallels between the points Nightingale made in "The Strangest Secret" and the way many people breed and fly their pigeons. Against this backdrop, I would like to share with you what I consider to be "The Biggest Secret" in breeding racing pigeons.

To be fair, it isn't really a secret. Actually, I am not sure there are **any** secrets in pigeon racing – just a rather large collection of knowledge that is readily available, frequently ignored and often recycled. I call it the "biggest" secret because it is probably the one single change you can make in your breeding operation that will result in the biggest positive improvement. Like Nightingale's thesis, it is pretty simple; **Genetic comparisons are best done within contemporary groups**.

Let me try to explain this is plain English. Everything we observe or measure in our pigeons is the result of two very separate forces. These two forces are defined by the **genetic** composition of the bird (inherited and fixed at conception) and the cumulative **environmental** history it has experienced to date. Some traits we observe are more strongly influenced by genetics with little apparent environmental influence. A good example of this would be color pattern (e.g. Check, Bar, Barless). Other traits are so strongly influenced by environment that it is often very difficult to determine the role genetics actually played. A good example of this would be the weaning weight of young pigeons (e.g. at a defined age such as 28 days). Well fed and keenly brooded chicks will grow significantly better than those raised by disinterested parents (perhaps recently re-paired) who are fed a marginal diet, even if the latter pair was genetically superior for this trait.

The easiest genetic improvements to make in breeding any species are those where the genetic influence is largest and the environmental influence is the smallest. This is because everything that is observed or measured for such a trait is largely due to genetics. If you see improvement, you correctly correlate that to the influence of the parents and ancestors that produced the bird.

Conversely, some of the most difficult genetic improvements to make are those of traits that are strongly influenced by environment. This is because it is very difficult to ascertain what role the genetic composition played in any particular observation. Geneticists have coined the term "heritability" to quantify the relationship environment has to a genetic trait. Those traits which are most strongly influenced by genetics are said to have a high heritability. Those traits most strongly influenced by environment (and therefore less strongly influenced by genetics) are said to have a low heritability.

In the case of breeding racing pigeons, we are clearly dealing with a set of traits (many genes), most of which are of low heritability. Don't make the mistake of thinking that because the heritability is low that the genetic component isn't significant or important. It just means that whatever we observe or measure is very likely most heavily influenced by environmental factors. Wouldn't it be nice if we could somehow remove the environmental effect so that what we observe is just due to the genetic component? Think of how much more quickly we could progress in our breeding programs!

Well that of course is the point of this article. There is indeed a technique that will allow us to do just that. It is known as **contemporary group testing**. The concept is really very simple. Raise a set of birds under identical conditions from birth to the completion of their evaluation. If they are all raised under identical conditions, then any differences that are observed are most likely due to genetic differences. Now of course it is impossible to raise a group of birds under exactly identical conditions, but that should be the goal. The closer we are to that goal, the more likely the differences we observe are due to genetics. We call a particular group a "contemporary" group because the members of the group are contemporaries of one another.

Let me explain how we do it in our lofts. For most fanciers, the situation will probably be much simpler. While we test a dozen different groups each year, most lofts will probably have just two contemporary test groups each year – the young bird team and the old bird team. For those who enter one loft futurity races, each futurity is another contemporary test group. If a flyer raises a round of late hatches, that would be another contemporary test group. A breeder might define each round as a contemporary test

group. There is no pat way that this has to be done. Just recognize that the goal is to compare the performance of birds within groups that have been treated the same to the degree that this is possible and/or practical for your particular situation.

Here is how we do it. At the beginning of the breeding season, the pairs are more or less synchronized. They are put together on the same date and most of the first round is usually laid within a few days. As the season progresses the hatch dates are not as close. We try to wean a group as close together to the same hatch date as possible. In reality, it can vary from a few days at the beginning of the breeding season to as much as three weeks later on. We wean them at the same age and follow the same weaning procedure. They are kept in "weaning cages" until an entire contemporary test group is ready to be placed in the test loft. Each test group is given their own test pen and though they may be tossed with other groups, their individual results are only compared to members of their own contemporary test group. While it is a good habit to be consistent in your management methods and treat all of the groups the same, it really isn't as critical as treating all members of a particular group the same. The latter is essential. For example, if there is an *e. coli* outbreak in a particular group, all members will have been exposed and have had the same opportunities and handicaps. If the water system breaks on one half of the barn and the birds are without water for 12 hours, it affects all the members of each group the same even though some groups went without water and others didn't. Once the birds are placed in the test group, the results are gathered electronically and largely ignored until the end of the test. This is to minimize any subconscious tendency I might have to favor any particular bird(s). If one member of the group becomes ill, a decision has to be made about treatment. If the decision is made to provide medication, then the entire group is medicated. In every aspect of managing the contemporary group, the objective is to make sure every member of the group is treated exactly the same. If we consistently apply this kind of approach, then we will be gathering data where the environmental affects have essentially been equalized. This then allows the differences that are observed to be more reasonably attributed to genetic differences between the test birds.

Lets see if we can apply what we have discussed so far to the race records that we frequently see advertised. Now I want to stress that winning a race is indeed an accomplishment. When I win one, I am as proud of that win and bird as anyone. I'll put it in their pedigree and post it to my web site the very day of the win! No, this discussion isn't meant to detract from the accomplishment of winning a race. Frequently though, people will assume that buying a bird that was "5 X 1^{st}" is going to improve their loft. It certainly could. It is indeed better than a bird that never returned home from its first and only race. But, is it better than a bird that was 3 X 2^{nd} in another advertisement or, more importantly, is it better than the birds you already have?

It helps our confidence in these ads when the number of birds in the race is included. Surely 5 X 1^{st} versus an average of 1,500 birds must be better than 3 X 2^{nd} versus 200 birds. Right? Not necessarily. An excellent handler who competes in a weak combine could easily have a bird that is 5 X 1^{st}. If the handler had shipped 15 birds to each race, then from a genetic analysis perspective the bird was really 5 X 1^{st} in its contemporary group of 15 birds. If the 3 x 2^{nd} was from a one loft futurity series in which there were an average of 200 birds in each race of the series, then this bird's record is relative to a contemporary group of 200 birds. Quite a difference. Still, we don't know which is the better bird. We only know that we can't really directly compare their records in such absolute terms as the number of 1^{st} places.

I recognize that most small lofts are not in a position to conduct an elaborate testing program. Even so, I submit that a conscious effort to make the environment the same for all members of the young bird team, for example, will go a long way toward equalizing the environmental affects and greatly clarify which birds are producing the most significant genetic improvement in the flock. Couple this "secret" with a clear vision of what you are trying to produce, stick with it for several generations and you will be very pleasantly surprised.