

"YOUR BREEDING PROGRAM" By Alice Wagner, editor of "Popular Dogs"

"If only I had known....." familiar words to folk in dogs, and they often tell the story that, "between failure and success the point is so fine, men seldom know when they touch the line."

There are no "secrets" in the breeding of fine dogs. Nature's laws, basic truths, are like the Ten Commandments, and bear repeating --the oftener the better. The receipt for success in the science of reproduction is both simple and complex but it can be summed up in one little word: "selection." SELECTION is the secret of breeding fine dogs--selection based on knowledge.

A great winner is no "accident." Back of each great dog is a planned breeding program and a continuity of purpose extending over many years, by the dog's immediate breeder or a succession of breeders.

Long ago people assumed that ill luck and good fortune were based upon chance. Science has narrowed the chasm -- if one does not depend entirely upon Lady Luck. Nature is all-powerful but science has proved that nature can be guided, controlled; that individuals traits in a living machine can be focused, fixed.

Harking back, I recall a poem that my parents used to quote to us children. (I am not sure I have it just right.)

If, of all sad words of tongue and pen, the saddest are, "It might have been," More sad are these we daily see, "It is, but it hadn't ought to be."

But of all glad words of prose and rhyme, the gladdest are, "There still is time."

Nothing could be more appropriate than this when we consider the little dogs which "hadn't ought to be, "but there is "still time" for breeders to take an inventory of their breeding programs, to check where they've been, how long they've been there, and the direction in which they are going.

BREEDING DEFINED

Breeding is not only the mating of two animals, it is the fusing of bloodlines. No breeder works in complete isolation. Your foundation stock will be the work of others before you; your puppies are sold and become a force in other kennels. You want to improve your basic stock, you want your stock to become "recognized" as a potent force in the breed. Although a large kennel with an unlimited budget may have a different breeding program than that of a kennel with limited means, housing only a few dogs, both kennels can be assured of a measure of success if they determine what they are seeking in a dog. Unfortunately, there has been very little pure research on the genetics of dogs.

BREEDING DEFINED continued

Not all kennel aims are the same. Some kennels breed dogs merely to sell puppies - purely a mercenary aim. But we believe that these breeders really would prefer to sell quality dogs, and we hope to convince such breeders that a carefully planned breeding program is essential to any kennel's survival.

Often a pet owner wishes to breed his pet once. That the finest stud should be selected is important so that the pet female will produce the best litter she is capable of whelping. Occasionally the owner of a stud will say that the stud "is not available." The study may be out of condition from too many shows, too many services, or he may be booked far in advance. The wise stud owner is entirely correct in refusing to permit his dog to mate with any female after examining her and her pedigree. Puppies reflect the genetic make up of a sire (the progeny test) and determine his value.

OWNER OF THE KENNEL

For those of you who are planning your first program, we cannot extend our best wishes without being reminded that a newcomer's enthusiasm generally will carry him through success and failure for a year or two. It is those who plan ahead who will pass the five-year milestone. Because we want you to say in the sport, we direct this digest of breeding material to you, hoping that it will help you to pass roadblocks and the milestones of ten and even twenty-five years.

The owner of a kennel is very important. Little has been written or said about kennel owners, but to be a success, one must have a deep and innate love for dogs --- and for people too. You must have patience with determination, faith in yourself and your dogs. You must be consistent in your program and your daily routine of feeding, cleaning, exercising and care of dogs. Conditioning of dogs, inside and out, must be constant. You need understanding not only of the weaknesses in our human world but also in our world of dogs. You will be dealing with the public in selling dogs as well as with fellow breeders.

Environment of domestic animals greatly influences temperament. Close association with your dogs to inspire their confidence in you is important. Some scientists state the dogs are endowed with temperamental tendencies at birth; other believe that if a dog is bad, it is only the result of an unfortunate experience with humans, that temperament is governed by environment. Perhaps this is true, but let us examine the old and proven laws of heredity.

FOUNDATION STOCK

Your original stock must be of quality material. Buy the very best you can afford for your foundation bitches since they will determine your success. (Do not purchase a stud dog --the services of a stud dog are all you need. Top stud dogs of proven quality are expensive to buy.)

FOUNDATION STOCK continued

Start with two females, either two litter sisters or two females which have at least once excellent common ancestor so that your stock will be somewhat uniform. If your females have completely different ancestors, you will introduce two distinct lines (types) and it will be harder to attain uniform in your kennel -- the aim of a good breeder.

Through disease or accident, a fine linebred strain may be lost -- together with years of work and planning when a breeder starts with only one bitch and develops only one strain. Start with two related quality females and breed two parallel lines.

If you are fortunate enough to have the owner of the bitches you buy give you an honest and unbiased appraisal of their lines, you will have a valuable guide to breeding them. If possible, study her litter brothers and sisters, as well as any of their progeny, to see if the desirable qualities are apparent in all. (Do not buy in a strain if all individuals seem different).

Should a female be disposed of if she produces a poor litter the first time? Bred to a good sire, first litters are pretty good indications. If she is of quality stock and a good specimen herself, try her with another stud before deciding not to breed her again.

THE STUD

Much has been said and written about the selection of the sire. A dog sires many times the numbers of puppies that a female produces. Therefore it is important for breeders to evaluate a dog carefully, as a popular stud has a great opportunity to influence his breed, improving or impairing it. The visible qualities of a dog are not the true gauge to his genetic make-up; however, it seems best for a breeder (unless his choice is governed by a motive of family line, etc.) to select a stud which has the desirable qualities of his own strain, so that uniformity of stock is not too disturbed.

How often have we heard the novice say that if he bred an overlarge specimen to a very small bitch, he would get medium-size dogs -- or that extremes (long to short-backed dogs) would give the right length. This is WRONG! The TRUTH is that one hereditary extreme does not cancel another and produce an average).

This is what happens: Half of the puppies will be one extreme and the other half, the other extreme. By breeding opposite extremes, a breeder only adds more major faults to stock. Keep as closely as possible to selected type when choosing a stud.

On the subject of production and the placing of one sire about another because of their winning offspring, we point out that unless records of ALL puppies sired by the individuals are considered, it is not fair to estimate either sire's value as a producer. One dog might be used widely, a conservative estimate of 100 times (total, 400

THE STUD continued

puppies), with a result of 10 champions. Another dog might service 50 bitches (total, 200 puppies), and sire 10 champions. The first sire has a record of .025 per cent, the second .05 -- the latter twice as good. However, here too, one must take into consideration the bitches used. One stud may have had better quality in the ancestry of the bitches bred to him.

The selection of a stud is entirely governed by the aims of your kennel program, but the stud of your choice should be an outstanding specimen. If he carries dominant genes of desirable qualities, fine; but make sure a stud is always selected for one particular bitch -- to complement her traits. The puppies should be improvements on both sire and dam -- the best your female is capable of producing. (We point out that most dominant animals are closely bred.)

The poorest specimen from a kennel that has consistent quality winners and produces is worth more than a choice dog (in himself a fine looking dog) from a kennel of usually low quality.

A good sire is not always a top show winner. However, if he has been shown consistently, he should have made a fair showing. Unfortunately, the elements that enter into all things (sickness of dogs, sensitivity of owners, etc.) affect the records of great dogs.

HEREDITY

When the sperm of the dog unites with the ovum of the female, the genes (units of heredity) combined with each other to form many "pairs" that produce the traits of a puppy. One gene may completely "dominate" the other; another gene may merely influence its companion gene. The amazing number of chance combinations of genes does betray the fact that "Lady Luck" affects reproduction to some extent. Often a female will produce an outstanding specimen; bred back to the same dog, the other litter or litters will be mediocre. Chance combinations of genes are responsible and stress the fact that breeders must be careful as possible in SELECTION.

DOMINANTS AND RECESSIVES

Some traits in a dog may skip a generation, or many generations. These are called "recessive" traits and will not appear in puppies unless BOTH sire and dam carries the recessive gene for that particular trait. A recessive fault does not mean it is a minor fault. Recessive are both major and minor traits (these determined by their relative importance and also by the ease of breeding in or out of a strain. Experiments prove that recessive bred to recessives breed true, and produce only recessives, while only one third of the dominants, when bred to dominants, breed true.

For example, red in Cockers is a recessive color; red bred to red will produce only red (Ed. Note: True buff bred to true buff gives buff.) Black is a dominant color; but black bred to black often produces black, red and particolor

DOMINANTS AND RECESSIVES continued

because most blacks carry recessives genes -- unless they are the so-called "pure" blacks (producing only blacks). Pure to pure dominant black breeds true.

It is often difficult for novices to keep in mind the difference in meanings of recessive and dominant. If a dominant gene is inherited only from one parent, this trait often will appear in a puppy. A recessive gene.

AMAZING FACTS IN HEREDITY

In the study of pedigrees, it is evident that marked ability "runs in families." Pride in ancestry is more than justifiable.

Almost 75% of American trotters are descended from the imported English stallion, Messenger, from whose stock England's best racers are also descended.

In the famous musical Bach family (in which there were considerable intermarry) there were 57 musicians of distinction recorded in six generations. Although Johann Sebastian Bach was the best known, actually 29 members of the Bach family were famous musicians.

The descendants of Jonathan Edwards (in whose family there was also much intermarrying of close relatives) are equally impressive -- not a poor one among them, the greatest percentage, professional men in field of responsibility; 125 lawyers, over 100 ministers, 13 college presidents, 60 physicians, 75 army officers -- and the list goes on.

It would seem that close breeding results in good traits -- but wait!

Psychology records the ill-famed Jukes family (also with much intermarrying). From this stock there are recorded over 600 feeble-minded, 310 paupers, 145 criminals, 7 murderers, and more than 300 immoral women. Several cousins married with appalling results.

Peter the Great of Russia, although a brilliant type, had the weakness of epilepsy and feeble-mindedness in his family that appeared in both Peter's children and grandchildren, as well as in the children of his imbecile half-brother, Ivan.

Isabella and Ferdinand of Spain both descended from great lines, but lines with taint. Their descendants were normal until, from one parent always needs a like recessive gene from the other parent for that particular trait to be apparent.

AMAZING FACTS IN HEREDITY continued

For instance, if a puppy is whelped with its eyes an unusual color of "X", it must have received a gene for this color from both parents. Perhaps neither parent had eyes the color of "X", but both sire and dam must have carried a recessive for it. Dogs can be tested for recessives, and a plan is explained later in a discussion of breeding methods.

With careful selection, by study of ancestors, recessive can be kept hidden. A hidden recessive is a gene with no mate to form a "pair".

PREPOTENCY

Traits that are a "mark of distinction" in a kennel or in a strain are "dominant" traits. A dog or bitch which is capable of transmitting his or her outstanding traits to almost every puppy is called "prepotent."

Just why an animal is prepotent in transmitting certain qualities is difficult to explain; it may be because the dominant gene for a particular trait was inherited from both parents (and received double strength) or from several ancestors which were related (the trait then would be very strongly augmented) -- as many of our prepotent dogs are closely bred.

A dominant trait will not change, or become recessive and, according to genetics, neither will a recessive trait become dominant.

A dog may have dominant traits for faults as well as virtues. He or she may be "dominant" for one quality only. So if an owner states, "My dog is dominant," one naturally asks, "Dominant for what?"

"Just how can one assist and guide nature?" you ask. First, let us review a few "case histories."

*in the second generation, first cousins married. The result, Don Carlos, madly depraved and cruel.

MAN, THE CREATOR

These examples of close interbreeding emphasize that if good characteristics are perpetuated by such breeding, it follows that bad traits are carried on and intensified in the same relative's proportions. Inheritance is subject to simple but definite laws.

When man began tampering with nature, he became a "creator." By SELECTIVE close breeding he has introduced many new varieties of plants and animals; the bandy-legged sheep with cannot hurdle a low fence, cattle without horns, seedless oranges, the beautiful palominos (golden colored horses); and there are "Justin Morgan, "founder of the famous Morgan breed of horses.

MAN, THE CREATOR continued

From early experiments in reproduction came theories, the most widely recognized being the Mendelian law that helps to show in what proportions the characteristics of near and distant ancestor may be expected to be transmitted to descendants.

METHODS OF BREEDING

It's as simple as that -- the method of breeding is determined by the degree of relationship of the two animals to be mated. However, some dogs have no common ancestor.

CROSSBREEDING

When animals of two different breeds of dog mate, the puppies are mongrels. Even if the dogs are purebreds, the puppies are still mongrels if they are of two different breeds. Do not call them "Shepherd-Collies;" nor half-purebred." Unless both dogs are or can be registered by the American Kennel Club, and are of the same breed, the puppies are not considered pure-bred by the AKC and purebred dog breeders. Call these dogs "crossbreeds."

OUTCROSSING

Outcrossing is employed when purebred are mated within their own particular breed and their relationship is quite distant or even absent. When animals with no common ancestor with five generations are bred, we say that the mating is an OUTCROSS.

A strict outcross mating is a gamble -- you are fusing the bloodlines of two distinct strains and undesirable recessives may appear. Outcrossing's only excuse is for experimentation. Always breeding complete outcrossed is a costly experiment resulting in a conglomeration of breed traits and confusion. For instance, a dog has 32 ancestors in 5 generations (1,024 in 10 generations!).

Pedigrees in a breeding program of outcrossing are of little value for study. Nor can such a progeny test (the study of the offspring of a desired sire) as it is impossible to know every your own foundation bitch's genetic make-up if she is the result of outcross breedings.

OUTBREEDING

In outbreeding (the safest, soundest program for the novice) it is wise and important that there be one or two quality, dominant common ancestors, second or third generations, in the pedigrees of the dog and bitch to be mated. To have a female of a strong family line bred to a dog of a strong male line where there is one DOMINANT

OUTBREEDING continued

COMMON GRANDPARENT, is wise outbreeding. Or, the female can be bred to a quality dominant dog which has been "linebred" (explained later).

In outbreeding (common ancestor) select two animals from established strains in which the desirable traits seem to be apparent in most of the ancestors so that neither strain will be disturbed too much as to uniformity. (That is the importance of the common ancestor which, if dominant, will contribute greatly to uniform puppies.)

If a fault becomes "fixed" in a kennel, but you want to retain the strain, then new blood by outbreeding with the absence of that particular trait is imperative to eliminate the fault. A very good reason to justify bringing into a kennel a complete outcross is to introduce a new and desirable trait. The old theory of "any new blood to build up a strain" is foolish. But often a fine outcross will bring new vigor into a kennel. Do not outcross time and time again, hoping for luck; select dogs which are of good bloodlines, of uniform stock, and with at least one quality common ancestor, second or third generation.

Confusion of type within a kennel shows that breeding is done with little thought and discrimination. A breeder's pride in his stock is that his animals are uniform in type. I am sure that we agree that constant outcrossing cannot produce uniform stock.

LINEBREEDING

Linebreeding is a succession of matings, the long range objective being the perpetuation of the blood of ONE particular animal. This style of breeding, with SELECTIVE patterns, will result in dominant stock. It is vital to breeders to understand it thoroughly even if they do not employ it themselves. Breeders often need linebred studs for their bitches.

Linebreeding spotlights major virtues and faults in your stock. Recessives cannot be kept hidden with continued close breeding as any trait is accentuated.

"Give back to the sire the best blood of his dam" (mate him to a female carrying the best quality bloodlines of his dam) is only one of the many horse and cattle phrases handed down (reworded to suit dogs). But we know that the value of a planned breeding program begins to make itself evident when offspring are bred back to a common dominant ancestor.

Linebreeding, done with SELECTION, is not dangerous, but a breeder must be familiar with the quality of the stock on both sides when linebreeding. Linebreeding is not a program for the person who is uncertain of the type he likes or for which he is striving. This type of breeding is for the seasoned breeder the man who has "an eye" for selection, for breeding, and an eye for culling puppies; who knows his stock and has patience.

LINEBREEDING continued

Some breeders have amazing success when they linebreed distinct strains with their kennels and then fuse the linebred bloodlines through the top quality specimens. For linebreeding, we point out that quality foundation stock is absolutely essential.

Some breed cousin to cousin; half-brother to half-sister; grandson to granddaughter, etc. It is the succession of breedings, keeping the blood of one particular animal (common ancestor) and intensifying it that is important. A second generation breeding back to a sire, that is, daughter back to grandsire, often will produce quite satisfactory results.

Linebreeding is a very loose term in our sport. Some breeders say a dog is linebred when perhaps only one generation has a common ancestor. The animal to which one is linebreeding (or a very close relative) should appear at least once in the second, and once or more in the third, etc.

One will agree that the concentration of the genes of one great dog or bitch through selected matings (permitting no major faults seem sound). We emphasize that when linebreeding, pick only an excellent specimen for intensifying his quality in your stock. There is another old saying, "Once in, then on the line." (Inbreed once, then linebreed.)

INBREEDING

Although we may never visit the Taj Mahal we want to know about it; so with many breeders, very few breeders may ever employ inbreeding, but all breeders eventually will see inbred stock and should know the ADVANTAGES AND DISADVANTAGES of this method. Inbreeding is the severest test of the heredity of an animal.

Inbreeding is the mating of closely related animals, their relationship determining the DEGREE of inbreeding. Full brother to sister is extremely intense as all traits are augmented to a great degree. Recalling the story of the Bach family, the Jonathan Edwards family, and the Jukes, we know that as well as bad traits are intensified, and recessives brought to light and made strong.

How, then can one safely inbreed? Nothing but top quality stock should be used. Remember: Inbreeding will never create or erase a fault; it will only intensify. Although faults may seem to be the result of close breeding, those weaknesses have been hidden in the strain.

Darwin mated brother to sister for 15 successive generations and doubled the size of his birds. Stamina and size are not "lost" therefore, because of inbreeding; the fault is in the eye of the breeder for not SELECTING correctly.

It is nature's own law that animals and birds mate close relatives of their own particular species. They rarely roam far to mate; yet they continue to reproduce offspring identical in size, color and characteristics. However, wild

INBREEDING continued

animals and birds with extreme faults have ceased to exist, and therefore, close breeding only continues to intensify the average size, the color and quality already apparent.

ADVANTAGES TO INBREEDING

Inbreeding has a definite place in reproduction and is the direct road to planned genetic purity. It is sometimes employed to determine if deformities are inherited. If a litter has a bad fault, mate daughter to sire, or son to dam to determine whether the fault is on the sire's or dam's side (a sure test).

If a young stud shows great promise and much depends upon his ability to pass on his qualities with no major faults, he could be bred to a litter sister to determine his recessives.

An exceptionally desirable quality in brother and sister (of carefully planned breeding and of stock with which the breeder is very familiar) could be perpetuated and intensified through inbreeding.

This is the one direct method of producing prepotency (dominance in transmitting traits). Great sire and great bitches are not common -- in fact, there are so few that in most breeds they can be counted on one hand.

A quality bitch can be bred back to her sire. You may not be satisfied with the puppies in your first generation but it is likely that you will be pleasantly surprised with your second or third litter -- each time breeding back to the quality sire of the first mating.

Inbreeding is a powerful tool in the hands of the student breeder. However, it is disastrous in the hands of the hit-or-miss breeder. Inbreeding should not be used by inexperienced breeders; too many faults may be intensified. There is a great prejudice against inbreeding, and this prejudice is justified if it is not done by a knowledgeable and discerning breeder. Even for breeders of top quality stock, this method may be a great disappointment but remember that the faults were there in the beginning.

THE LINES STRENGTHEN

A good example of inbreeding is that of the cattle, inbred for hundreds of years on the Channel Island, Alderney, Jersey and Guernsey, famous for the fine dairy cattle bearing their names. The strains improve and each line grows stronger, we are told, with no new imported blood. Even today, these animals are shipped all over the world to improve cattle lines with their recognized dominant traits.

CULLING

After inbreeding, culling is important; retain only the best puppies (or puppy) knowing that your future program depends entirely upon the puppies you keep. Correct inbreeding means highly uniform stock. The more inbred the strain, the purer the stock (genes more consistent). However, brother and sister of a litter are not equally good or bad. Litter brothers and sisters vary considerably unless they are highly inbred.

The deep-seated belief that the mating of close relatives is harmful and unnatural had validity only when stock is inferior. As far back as the 18th century the great breeder, Robert Bakewell, proved that SELECTIVE close breeding was valuable in maintaining a uniform type of animal. Close breeding is a science but will not produce immediate results. A price must be paid and in the beginning a proportion of undesirables will appear. These must be carefully culled if the stock is to become homozygous (breed true). The importance of culling cannot be stressed too much. Some breeders cull when puppies are very young; some breeds develop slowly, and you need patience. Culling must be done with the head and not the heart.

A HEART BREAKING TEST

Mohammed played a unique role in starting the Thoroughbred horse, an example of close breeding. He wanted stalwart horses with stamina, speed and courage. For 2 days his horses were fenced on the edge of the desert in sight of running water. On the 3rd day the bars were lowered. Frantically the thirsty horses dashed for the stream - but suddenly a trumpeter sounded a charge.

Most of the horses swept into the stream -- all but a few -- and those few stout-hearted threw up their heads, leaped the stream, and then swept on in battle formation.

Although the entire herd was composed of Mohammed's prized horses, he commanded all but those few which had heeded the trumpeter's call to be destroyed. The valiant were saved for breeding purposes, and inbred to perpetuate those qualities he desired in his horses.

MUTATIONS-VARIATIONS

If a surprising and new characteristic in one of your dogs become evident -- and you believe it to be an improvement in the breed and that it should be established -- it might be fixed by inbreeding. Mutations often are of great value to man. However, it should be pointed out that most mutations are harmful and have never been a help in the wild state.

In the wilds, the trait is lost or becomes recessive, hidden for many generations or until a chance mating, to an animal which also carries a gene for this trait, causes it to be intensified and reappear.

MUTATIONS-VARIAIONS continued

There are those who believe evolution proceeds by abrupt appearances of unusual traits (mutations) rather than by gradual change. If mutants are the material of evolution, as most geneticists are convinced they are, then the survival of mutants is important. Often the animal cannot transmit the trait.

A TRUE MUTANT can be established immediately by an inbreeding test (sister to brother) to fix the trait.

A mutant is not a "throwback;" rather, a mutant is much like the introduction of new blood. A true mutant with a desirable trait is a valuable animal and experienced breeders claim that 50% of the offspring inherit the gene. The silver blue mink is a mutant, and it is regrettable that space does not permit the telling of many interesting stories of unusual animals (now valuable) which were once called freaks.

THE MILESTONES

When the old-timers gather at the shows in years to come, will you be there? We hope so. Success will not come overnight, very rarely in one's first litter. If it does, it is usually just a whim of Lady Luck. Either the dog's quality is not dominant or -- as in the case of one great dog which appeared in a first litter, his owners did not know how to preserve his genetic value and his great qualities were weakened almost so the point of non-existence.

So if a breeder hopes to breed winning dogs, utilizing time, money and determination, he will not be disappointed. However, when a breeder hopes to change fundamental traits with his breed, then he must prepare for a long period of trial and error. Our advice is to leave the experiments and the uncertain methods of breeding to the scientists and breeders who have unlimited time and money.

Be earnest in the breeding of good dogs. Be consistent in your devotion to your program. Your responsibility to the breed and its future is infinite.

THE END.