

# Exhibition Poultry

The #1 Internet Publication For Information On Showing & Breeding Exhibition Poultry

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Red Stick Poultry Club—Blue Card Show: Champion English and Best Of Show, Jamie Ducote, Black Orpington Pullet. *Photo by Jamie Ducote.*



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# Exhibition Poultry

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## Exhibition Poultry Magazine®

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### **Exhibition Poultry Magazine**

180 Snowden Rd., Winnfield, LA 71483

Editor/Publisher: Ann Charles, (318) 209-9802 (txt only please)

email: [office@exhibitionpoultry.net](mailto:office@exhibitionpoultry.net)

IT/Publisher: Andrew Charles, (318) 413-9489 (leave message)

email: [admin@exhibitionpoultry.net](mailto:admin@exhibitionpoultry.net)

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## From the Editor . . .

I go into the New Year with the best group of Araucana I have ever had, and in substantial numbers. Part of this is due to the fact I have not been to a show for a year. And, that fact is due to the current Covid situation and erring on the side of caution. However, the break from shows has let me put my best birds, who would normally have to stay in condition, right into the breeding pens. With just about every variety I am working on, that was a couple of extra months hatching chicks out of each bird in 2020. Add in a little luck last year with some excellent hatches and I have a much larger group of good birds to go into my Winter/Spring pens.

The progress I made last year on my various varieties of Araucana was almost exponential. I am not saying I won't be going to anymore shows, because I will, when things quiet down. But I think the break has benefited my breeding program overall. I know a lot of you are like me and every time one of those hens or pullets lays an unfertilized egg in her conditioning cage you have to think—would that have been her best chick this year? You just don't know.

At this writing, it appears the APA/ABA National Shows are still a go in California next month. I have my fingers crossed for all of you attending. I fully understand the reasoning behind it, but too many established shows have been canceled this year. Ohio National included. I know the world does not revolve around Exhibition Poultry and we should have bigger things to worry about but this is what we do. If you are like me these birds are always on your mind.

On a closing note—too many good people have been lost this year. Too many have spent days or weeks in the hospital being nursed back to health (if they were lucky) with no idea what the long term effects of this new disease will be on them. Do you think in 100 years they will be talking about Covid-19 they way we do the Spanish Flu of 100 years ago? Time will tell.

Until next time. . . . Ann Charles, Editor



## APA News • January 2020

Happy New Year to everyone from the American Poultry Association! I am sure we all wish for a better 2021 than what we experienced in 2020. Things here in the APA office plod along as usual. We had several new members join in December and are glad they have made the choice to join America's oldest livestock organization. Your APA Board continues to move the business of the APA forward by phone conferences and other communications. Please take time to thank them for their efforts and dedication. They serve the APA as volunteers and even though we may sometimes disagree with the decisions that are made they are genuinely trying to do what they believe is best.

The 2020 Annual Meet scheduled for February 2021 and hosted by the Pacific Poultry Breeders is still a go at this point (12/12/20). They are also to host the 2020 ABA National Meet. I know the club members have put a tremendous amount of effort into putting on a great show. It is a shame that everything going on in the world makes things so uncertain but that is just the way life is for now. I do hope they are able to safely continue and wish for them the very best. Some members of the APA Board do still plan to attend while others do not. We are exploring ways that Board members can participate virtually and so the important matters the Board needs to address can be moved forward. While it is not ideal, it is the best we can do in our current climate.

The Chattahoochee Valley Poultry Association was to be the host site for our 2021 Semi-Annual

Meet also in February. Because the facility they use as their show location is being used as a part of their local response to the Covid-19 pandemic, they were forced to cancel their show. I have been told by many of the great job they do in hosting a show and we all regret they had to cancel. By the time you read this a replacement site will have been selected, so watch the APA News and Views for that announcement.

A few reminders about how the APA communicates with its members may be in order given some of the concerns I hear in the office. Our newsletters are sent electronically through MemberPlanet for those who use email. If you change your email address please let the office know so that you don't miss out on anything that may be sent out. Some members choose to "Unsubscribe" from MemberPlanet and so the only communications that they receive are dues renewal notices. If this applies to you, let me know and we can get things changed so that you will be back in the loop. It is also not a problem if you wish to receive the newsletters by mail, just let me know that is your choice and I will make it happen. If you are not getting the communications that are sent, please contact the office first so I can attempt to solve the problem. Getting on social media and complaining does little to help resolve your concern. If you do contact me and I fail to deal adequately with your concern, then feel free to go on whatever platform you choose and say as many bad things about me as you wish. All I am asking is for a chance to fix the problem first.

Time to shut up and get off my soapbox. I do hope we can all see one another soon at the shows. Please stay safe!

David Adkins—APA Secretary

**Advertising & Article  
Submission Deadline  
for the next issue of Exhibition  
Poultry Magazine is  
February 15th.**





## ABA News • January 2021

2021 is here. Let us give thanks to our hobby and our resilience. Not everyone made it through and not everyone had a great year. As I write this – I only hope and pray that we are all safe and healthy.

2020 ABA National Meet is scheduled for February 5-7 in Lodi California with the Pacific Poultry Breeders.

2021 is an election year for the ABA. We have elections in a number of districts. District 2 (NY and NJ), District 6 (IN,IL,MI) District 11 (AR,KS,NE,OK,MO) and District 12 (TX). If you live in these districts and your ABA dues are paid – you should have received a ballot in the mail (or will very shortly). Please reach out to ABA office if you have not received yours by 1/20/2021. I will look into it and send another.

The ballot will include specific instructions. There will be a six-week timeline for voting, which will be noted. Please make sure to read all information and instructions. Only ballots sent via USPS are counted. There is no email voting for this election.

What's happening with the ABA 2020 National. It is scheduled with the Pacific Poultry Breeders in California and will be held February 5-7. If you would like to consider attending – please contact Anthony Rose at [arose@vaeimail.com](mailto:arose@vaeimail.com) and he will make sure you receive a premium book. It does not need to be said how hard it is to pull off a major show in these times. The folks at PPBA seem to be up to the task. As of this writing, they are ready, willing, and able to produce

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this duel national for our hobby. To learn more, visit their website - Pacificpoultrybreedersassn.com. Kudos to the show management and let's hope all goes well between now and then.

Spotlight on New Varieties the ABA Standard Committee at this time:

**Blue American Serama**

COMB, FACE, WATTLES AND EAR LOBES: Deep Red  
BEAK: Swarthy yellow  
EYES: Reddish Bay  
SHANKS & TOES: Swarthy yellow  
PLUMAGE: Refer to Blue color description, page 223 (2020 Bantam Standard)

**Splash American Serama**

COMB, FACE, WATTLES AND EAR LOBES: Deep Red  
BEAK: Swarthy Yellow  
EYES: Reddish Bay  
SHANKS & TOES: Swarthy yellow  
PLUMAGE: Refer to Splash color description, page 272 (2020 Bantam Standard)

I would like to thank everyone who took advantage of the ABA Grab bag special. This enables us to clear some space on our shelves for newer apparel. I am working on a new T-shirt soon. Please watch for announcements. Our ABA online store (both on our website and eBay listings are continually active. Thank you for your support of the ABA. We are able to celebrate you – because of your support. It really is that simple.

2021 Legbands are selling quickly. The earlier you order yours, the lower your numbers will be. Please send in those orders now to make sure you get the bands you need for 2021.

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Augusta, NJ 07822 or you can join on our website at [www.bantamclub.com](http://www.bantamclub.com). The American Bantam Association has been servicing our membership since 1914 and plan to continue on with this tradition. If you would like to join with us in this quest, please visit our website at [www.bantamclub.com](http://www.bantamclub.com). We'd love to have you.

Happy New Year! Wishing all our ABA Friends and Family the best for 2021. Good luck out there and breed 2021 Champions!!

Karen Unrath - ABA Secretary



# POULTRY GENETICS: AN INTRODUCTION

*Written by: Dr. Jacquie Jacob,  
University of Kentucky*

If you breed poultry or are considering breeding poultry, a basic knowledge of poultry genetics is important. In particular, it is useful to understand the key elements of genetics and to know why certain traits exist in certain chickens.

A basic knowledge of poultry genetics begins with understanding the following key terms:

- **DNA** (short for deoxyribonucleic acid)—The material containing the genetic instructions used in the development and function of an organism. DNA is arranged in the double helix-shaped strands.
- **Gene**—A segment of DNA that carries a blueprint for the function of a cell and, ultimately, a particular characteristic of an organism.
- **Chromosome**—A structure containing a complete strand of DNA. Chromosomes function in the transmission of hereditary material from one generation to the next. Chromosomes typically come in pairs, with one set donated from the mother and one from the father. Humans have 23 pairs of chromosomes. Chickens have 39 pairs.
- **Genotype**—The genetic makeup of an organism.
- **Phenotype**—The observable physical or biochemical characteristics of an organism resulting from its genotype. Examples of aspects of a chicken's phenotype include body shape, feather color, eye color, comb type, and so on.

The two categories of chromosomes are sex chromosomes and autosomes. The sex chromosomes carry the genetic material that determines the sex of an offspring. In humans, the sex chromosomes are referred to as X and Y. A human having the sex chromosomes XX is female, and a human having the sex chromosomes XY is male. In chickens, the sex chromosomes are referred to as Z and W. A chicken having the sex chromosomes ZW is female, and a chicken having the sex chromosomes ZZ is male. The sex chromosomes of mammals and birds are illustrated in Figure 1. Autosomes are all the chromosomes except the sex chromosomes.

Sex chromosomes of mammals and birds Figure 1. Sex chromosomes of mammals and birds (Image created by Dr. Jacquie Jacob, University of Kentucky).

Because chromosomes come in pairs, genes also come in pairs. Each parent contributes one gene in each pair of genes. The phenotype for a specific trait in a chicken depends on the makeup of the gene pair for that trait. If the genes are the same, the genetic state is referred to as homozygous. If the genes are different, the genetic state is referred to as heterozygous. A gene that can express itself in the homozygous state or the heterozygous state is referred to as a dominant factor. A gene that can express itself on-

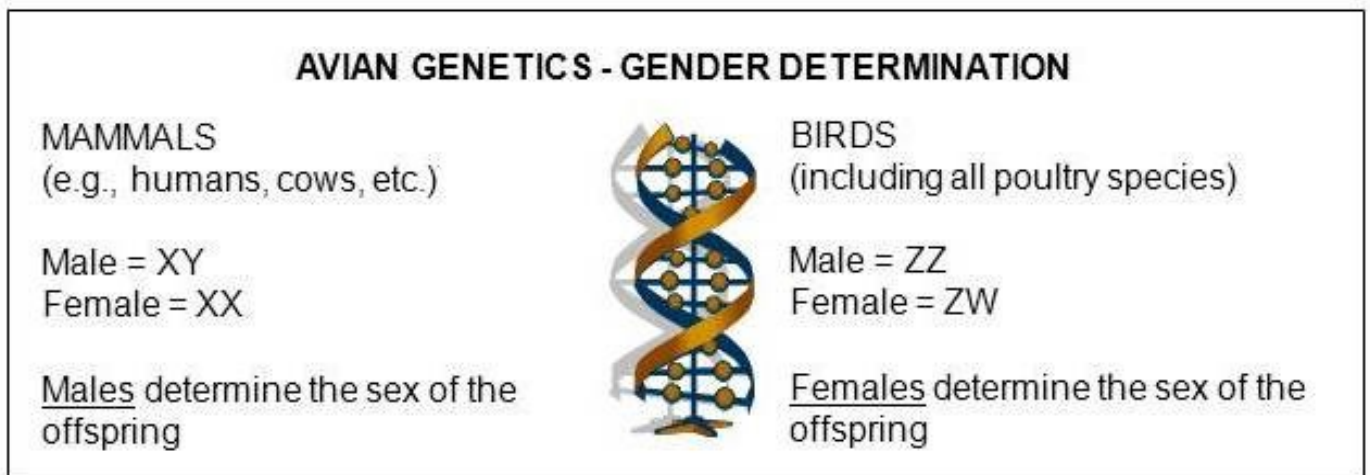


Figure 1. Sex chromosomes of mammals and birds (Image created by Dr. Jacquie Jacob, University of Kentucky).



ly in the homozygous state is referred to as a recessive factor. When dealing with a trait for which there is a dominant gene and a recessive gene, three conditions (combinations of the genes in the gene pair) can occur. The homozygous dominant condition occurs when both genes present are the dominant gene. The homozygous recessive condition occurs when both genes present are the recessive gene. The heterozygous condition occurs when one gene present is the dominant gene and the other is the recessive gene. (The two variant forms of the gene in such a gene pair are called alleles.)

Typically, in the heterozygous condition, the dominant gene is expressed over the recessive gene. In some gene pairs, however, each gene is capable of some degree of expression in the heterozygous condition. This phenomenon is referred to as codominance. The contribution from each gene in the pair can be equal, or the contribution can be dominated more by one gene than the other.

To confuse things further, not every trait is controlled by a single pair of genes. A particular trait can be controlled by numerous gene pairs. Such traits are called quantitative traits. Brown shell color in eggs, for example, is controlled by as many as 13 genes. The result is the range of brown color observed in eggs laid by different breeds of chickens.

#### GENETICS OF SIGNIFICANT OBSERVABLE TRAITS IN CHICKENS

When breeding chickens, it is helpful to understand why certain significant observable traits exist in certain chickens. These traits include comb type, feather color, shank/foot color, and skin color.

#### GENETICS OF COMB TYPE

Chickens have a variety of comb types, as shown in Figure 2. The genetics of comb type of chickens is historically significant. Gregory Johann Mendel is considered the father of genetics. His work with peas resulted in the idea that genes control different physical characteristics. Building on this idea, William

Bateson used comb type of chickens to show that genetics apply to animals as well.

Comb type in chickens basically is controlled by two different genes on two different chromosomes. One is the rose comb gene (represented by the letter R), and the other is the pea comb gene (represented by the letter P). A presence of the gene is represented by the uppercase letter; an absence of the gene is represented by the lowercase letter. Both the rose comb gene and the pea comb gene can express

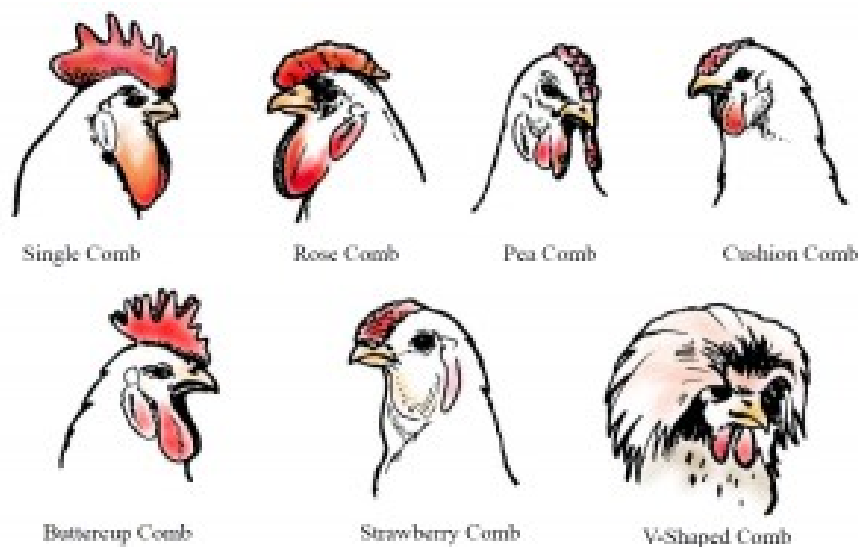


Figure 2. Diagram showing the different comb types for chickens. Source: the University of Illinois (Used with permission)

themselves in the heterozygous state. That is, only one copy of the rose comb gene or the pea comb gene is sufficient for that type of comb to occur. Therefore, both genes can be thought of as dominant genes.

When at least one copy of the rose comb gene is present and the pea comb gene is absent, the result is a rose comb. In other words, a chicken with a rose comb has one of two possible gene combinations: RRpp or Rrpp.

When at least one copy of the pea comb gene is present and the rose comb gene is absent, the result is a pea comb. A chicken with a pea comb has one of two possible gene combinations: rrPP or rrPp.

When at least one copy of each gene is present,



the result is a walnut comb. A chicken with a walnut comb has one of four possible gene combinations: RRPP, RrPP, RRpp, or RrPp.

When both genes are absent, the result is a single comb. A chicken with a single comb has the only possible gene combination: rrpp.

To further understand the genetics of comb type, consider the results of breeding certain chickens. For example, what happens if a chicken that breeds true for pea comb (that is, a chicken that has the gene combination rrPP) is crossed with a chicken that breeds true for rose comb (that is, a chicken that has the gene combination RRpp)? Considering that each parent contributes to the offspring one each of the two genes that control comb type, the only possible gene pair that the parent that breeds true for rose comb can donate is Rp. Similarly, the only possible

	Rp	Rp
rP	RrPp	RrPp
rP	RrPp	RrPp

Figure 3. Gene combinations resulting from mating a chicken that breeds true for pea comb with one that breeds true for rose comb (Image created by Dr. Jacquie Jacob, University of Kentucky).

	RP	Rp	rP	rp
RP	RRPP Walnut	RRPp Walnut	RrPP Walnut	RrPp Walnut
Rp	RRPp Walnut	RRpp Rose	RrPp Walnut	Rrpp Rose
rP	RrPP Walnut	RrPp Walnut	rrPP Pea	rrPp Pea
rp	RrPp Walnut	Rrpp Rose	rrPp Pea	rrpp Single

Figure 4. Gene combinations resulting from mating offspring of the cross depicted in the previous figure (image created by Dr. Jacquie Jacob, University of Kentucky).



gene pair that the parent that breeds true for pea comb can donate is rP. Consequently, as shown in Figure 3, all offspring from such a mating would have the heterozygous state for both genes (that is, RrPp) and would thus have walnut combs. The offspring, however, would not breed true for walnut combs; that is, birds with walnut combs bred to birds with walnut combs could produce offspring with other comb types.

Gene combinations resulting from mating a chicken that breeds true for pea comb with one that breeds true for rose comb Figure 3. Gene combinations resulting from mating a chicken that breeds true for pea comb with one that breeds true for rose comb (Image created by Dr. Jacquie Jacob, University of Kentucky).

Exploring further, if two of the offspring depicted in Figure 3 are crossed, the number of possible combinations of genes increases. Each parent could contribute one of four possible gene combinations, resulting in 16 genetic combinations in the offspring. By considering the phenotype associated with each different genotype combination, you can calculate the odds of a particular comb occurring in the offspring. As shown in Figure 4, there would be a 9/16 chance for a walnut comb, a 3/16 chance for a rose comb, a 3/16 chance for a pea comb, and a 1/16 chance for a single comb.

Gene combinations resulting from mating offspring of the cross depicted in previous figure Figure 4. Gene combinations resulting from mating offspring of the cross depicted in the previous figure (image created by Dr. Jacquie Jacob, University of Kentucky).

#### GENETICS OF FEATHER COLOR

To understand the genetics of feather color, it is necessary to understand how the different colors of poultry are achieved. In poultry, there are secondary and primary color patterns. A secondary pattern is a color pattern that appears on individual feathers. Single and double lacing, mottled, and so on are secondary patterns. Primary patterns are color patterns that involve the entire body of the chicken. An example is the Silver Columbian pattern. The Silver Columbian is a white chicken with some black in the neck, wing, and tail areas. Because the pattern does not

manifest on individual feathers, it is referred to as a primary pattern.

To breed a chicken having a particular color scheme, one begins with the background color, which is controlled by the E-locus gene. The other color and (secondary) pattern genes essentially modify this background. Several different genes interact to determine feather colors and patterns. Considering white and black to be colors, there are three basic feather colors: black, white, and red (gold). (Technically, white and black are not colors: white is actually the result of all the colors combined, and black is the lack of reflection of light in the visible range.) The colors of chicken feathers are achieved by diluting and enhancing or masking black and red. For example, Rhode Island Reds have the gold gene with the dominant mahogany (red-enhancing) gene. A blue feathering is produced when a black-feathered chicken has the blue gene, which dilutes the black color. Two copies of the blue gene result in the splash effect. A white chicken can be achieved in a number of ways by inhibiting black and red pigmentation with combinations of genes (such as dominant white, recessive white, silver, Columbian, and Cuckoo barring).

Some perceived feather colors actually are due to the structure of the feather rather than to pigmentation. That is, the purple and beetle green sheens seen in some poultry are due to the way the feather structures reflect light rather than to the presence of pigments.

#### GENETICS OF SHANK/FOOT COLOR

The visible color in the shanks/feet of chickens is the result of a combination of colors in the upper skin and deeper skin. Shank/foot color basically is controlled by three genes, one of which is sex-linked and located on the Z sex chromosome. Table 1 shows the shank/foot colors that result from the major gene combinations. Remember that each chicken has two copies of each gene. The table is only a guide because other genes affect shank/foot color as well. For example, the sex-linked barring gene, B, is located on the Z sex chromosome and is a strong inhibitor of melanin pigment in the skin. Barred Plymouth Rock chickens would not have light shanks if not for the fact that they have the sex-linked barring



gene. Female Barred Plymouth Rocks (having the sex chromosomes ZW) tend to have darker shanks than the males (having the sex chromosomes ZZ) due to the dose effect of the barring gene in the male.

#### GENETICS OF DARK SKIN COLOR

The silkie chicken, shown in Figure 5, is known for its dark skin color. The dark skin results from higher than normal levels of melanin. A pigment cell activator called fibromelanosis causes pigmentation of connective tissue. The inheritance of the dark skin phenotype is controlled by the fibromelanosis gene, Fm, as well as dermal melanin inhibitors, such as the sex-linked Id dermal melanin-inhibiting mutation. Chickens having the Fm gene but not the Id gene have dark skin and connective tissue. The combination of the Fm gene and the Id mutation results in a chicken with no visible skin pigmentation. Other dermal melanin inhibitors also may have an influence on the degree of melanization (pigmentation) caused by the Fm gene (or the degree of expression of the Fm gene). Moreover, some genes influencing plumage color also have an effect on skin color, such as the E-locus alleles, which may influence the expression of the Fm gene. However, fibromelanotic silkies exist with black, white, blue, and partridge feather patterns.

**Table 1.**

#### **The genetics of shank/foot color**

<b><u>Shank/Foot Color</u></b>	<b><u>Genes</u></b>
Near black with white soles	W+, Id, E
White shanks and feet	W+, Id, e+
Black shanks, white soles	W+, id+, E
Blue shanks, white soles	W+, id+, e+
Near black with yellow soles	w, Id, E
Yellow shanks and feet	w, Id, e+
Black shanks with yellow soles	w, id+, E
Green shanks with yellow soles	w, id+, e+



Black silkie chicken Figure 5. Black silkie chicken (image by Dr. Jacquie Jacob, University of Kentucky)

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# Review of the Factors That Influence Egg Fertility and Hatchability in Poultry

Fertility refers to the percentage of incubated eggs that are fertile while hatchability is the percentage of fertile eggs that hatch. It is therefore important to understand the factors that influence fertility and hatchability of eggs. For the hatchability traits, breed has little effect on hatchability of poultry eggs, although light breeds have been reported to have higher fertility and hatchability.

The diet of breeder poultry should be adequate in both quality and quantity to meet the recommended levels set out in the feed standards for the category. The most influential egg parameters that influence hatchability are: weight, shell thickness and porosity, shape index (described as maximum breadth to length ratio) and the consistency of the contents. Heat stress reduces the external and internal egg qualities. Heat stress affects all phases of semen production in breeder cocks.

Hatchability for small eggs is lower compared to that of medium and large eggs. There are many factors contributing to the failure of a fertile egg to hatch which include lethal genes, insufficient nutrients in the egg and exposure to conditions that do not meet the needs of the developing embryo.

Breeder factors that affect hatchability include strain, health, nutrition and age of the flock, egg size, weight and quality, egg storage duration and conditions. The optimum temperature range for poultry is 12°-26° C (54°-79° F°). Fertile eggs should not be stored for more than 10-14 days, after 14 days of storage; hatchability begins to decline significantly. The position (large end up or vice versa) of egg storage influences hatchability. Eggs stored with the small end up have higher hatchability as compared to the large end up.

Incubation of fertile eggs can be done naturally by a broody hen or in an incubator. The broody hen provides the fertile eggs with optimum environmental conditions (temperature, egg turning and humidity) to stimulate embryonic development until

hatching. The incubator is a simulated artificial design that mimics the broody hen's role of providing fertile eggs with optimum environmental conditions (temperature, egg turning and humidity) to stimulate embryonic development until hatching.

A constant incubation temperature of 37.8° C (100° F) is the thermal homeostasis in the chick embryo and gives the best embryo development and hatchability. Mortality is seen if the temperature drops below 35.6° C (96° F) or rises above 39.4° C (103° F) for a number of hours.

Egg turning during incubation is critical for successful hatching and influences hatchability. No turning of eggs during incubation results in low hatchability and delays hatch by a few days.

*Citation: A.M. King`ori , 2011. Review of the Factors That Influence Egg Fertility and Hatchability in Poultry. International Journal of Poultry Science, 10: 483-492.*



**Shane's Bantams**  
2019 Old English National Champion  
with a BB Red Cock Bird  
Shane Morris (318) 447-1387

# Birds Choose Sweet-Smelling Mates

For most animals, scent is the instant messenger of choice for quickly exchanging personal profiles.

In a first-of-its-kind study, a Michigan State University researcher has demonstrated that birds do indeed communicate via scents, and that odor reliably predicts their reproductive success.

Birds' preen glands are located near their tails. Using their beaks, birds extract oil from the glands and rub it on their feathers and legs. Historically, this activity was thought to simply bolster the strength of feathers. Danielle Whittaker, managing director of MSU's BEACON Center for the Study of Evolution in Action, and her research team, however, have shown that it plays a key role in signaling reproductive health.

"This study shows a strong connection between the way birds smell near the beginning of the breed-

ing season -- when birds are choosing mates -- and their reproductive success for the entire season," she said. "Simply put, males that smell more 'male-like' and females that smell more 'female-like' have higher genetic reproductive success."

The long-held assumption was that birds' preferred methods of communication and mate selection were visual and acoustic cues. However, study results showed that individual bird odor correlated with reproduction success while size and plumage were less reliable. The study also revealed that females were making multiple decisions based on how their potential mates smelled.

"Based on odor, females seemed to be choosing with which males to mate. In addition, the researchers believe odors serve as beacons for hormone levels, current condition and overall health, and genetic background.

*Source: Michigan State University. Researchers from Indiana University also contributed to the study. The research was funded in part by the National Science Foundation.*

## 2020 NHBCA Western District Meet

Norman, Oklahoma - November 7, 2020

Held in conjunction with the Canadian Valley Poultry Show



Overall Reserve Champion New Hampshire: Bantam cockerel, exhibited by Carl and Rose Stough.



Reserve of Breed (Open): Bantam pullet, exhibited by K & K Bantams.

***Thank you to all of our exhibitors!***

**The New Hampshire Breeders Club of America**

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Overall Champion New Hampshire: Large fowl cockerel, exhibited by Correy Walton. Also, Best of Breed & Champion American.





**4th Annual Show  
December 4, 2021  
Baton Rouge, Louisiana**

**Blue Card Show Champions**

**BANTAMS**

Ch Modern Game - Maddison Harris, Birchen Cockerel. Res Modern Game - Jeff & Jessica Duguay, Splash Pullet.

Ch OE Game - Colby Harris, Brown Red Pullet. Res OE Game - Shane Morris, BB Red Cockerel.

Ch SCCL - PEEP - Peters, Rhode Island Red Pullet. Res SCCL - Russell Roy/Past Time Farms, Rhode Island Red Cockerel

Ch RCCL - Colby Harris, Black Wyandotte Pullet. Res RCCL - Carey Bantams, Golden Sebright Hen.

Ch AOCCL - Shannon Lejeune, Dark Cornish Hen. Res AOCCL - Alex Rodriguez, Buckeye Cockerel.

Ch Featherleg - Tony Davis, Bearded White Silkie Cockerel. Res Featherleg - Mills & Shay, Buff Brahma Hen.

Ch Bantam Duck - Todd Spidel, White Call. Res Bantam Duck - Ken & April Miskimon, White Call.

**Ch Bantam - Colby Harris, OE Game.**

**Res Bantam - Shannon Lejeune, Dark Cornish**

**LARGE FOWL**

Ch American - Matthew Waller, Rhode Island Red Cockerel. Res American - J&J Farms, White Plymouth Rock Cockerel.

Ch Asiatic - Mills & Shay, Black Cochin Hen. Res Asiatic - Sydney Norris, Black Langshan Hen.

Ch Continental - Skip & Jen Bittner, Black Copper Marans Pullet. Res Continental - Skip & Jen Bittner,



Blue Card Show: Champion English and Best In Show, Jamie Ducote, Black Orpington Pullet.



The Red Stick Poultry show hosted the Marans Club USA National Specialty Show. 56 Marans were entered. Best of Breed and Continental Champion went to a Black Copper Marans pullet exhibited by Jennifer and Skip Bittner. Photo by Skip Bittner.



Wheaten Marans Pullet.

Ch English - Jamie Ducote, Black Orpington Pullet

Res English - Matthew Waller, Black Australorp Pullet.

Ch Mediterranean - Carson & Zac Duncan, Black Minorca Pullet. Res Mediterranean - Steve Beaty, White Leghorn Pullet.

Ch AOSB - JNR Poultry - Black Sumatra Hen. Res AOSB - Brent Gholson, Black Ameraucana Cockerel.

### **WATER FOWL**

Ch Heavy Duck - Skip & Jen Bittner, Black Muscovy Cock. Res Heavy Duck - Matthew Web, Black Muscovy Pullet.

Ch Medium Duck - Matthew Web, Black Cayuga Cockerel. Res Medium Duck - Matthew Web, Black Cayuga Pullet.

Ch Light Duck - Carley Hukill, Black Magpie Cockerel. Res Light Duck - Foutch Farms, Gray Runner Pullet.

CH Standard Duck - Skip & Jen Bittner, Black Muscovy Cock. Res Standard Duck - Carley Hukill, Black Magpie Cockerel.

Ch Medium Goose - Torrie Frye, Pilgrim Sex-Linked Hen. Res Medium Goose - Torrie Frye, Pilgrim Sex-Linked Cockerel.

Ch Heavy Goose - JNR Poultry, Brown African Cockerel. Res Heavy Goose - Foutch Farms, Brown African Pullet

Ch Goose - JNR Farms - Brown African. Res Goose - Torrie Frye - Pilgrim Sex-Linked.

Ch Guinea - JNR Poultry, Pearl Cock. Res Guinea - Skip & Jen Bittner, Pearl Pullet.

Ch Turkey - Jaydin Monsees - Bronze Cockerel. Res Turkey - Jaydin Monsees - Bronze Pullet.

CH Standard - Jamie Ducote - Black Orpington. Res Standard - Skip & Jen Bittner - Black Copper Marans.

Ch Waterfowl - JNR Poultry - Brown African. Res Waterfowl - Skip & Jen Bittner - Black Muscovy

**Best in Show - Jamie Ducote - Black Orpington.**

**Res Best in Show - Colby Harris, OE Game**



Yellow Card Show: Champion Old English Game and overall Show Champion, a BB Red Cockerel exhibited by Shane Morris. Photo by Rachel Potter.

Best Display with 632 points Jeff & Jessica Duguay with Birchen Modern Game. Res Display with 458 points Tony Davis with White Silkies

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### **Yellow Card Show Champions**

#### **BANTAMS**

Ch. Modern Game - Jeff & Jessica Duguay, Birchen Pullet. Res Modern - Quaid Durbin, Brown Red Pullet  
Ch. OEG- Shane Morris, BB Red Cockerel. Res. OE - Colby Harris, Brow Red Pullet.

Ch. SCCL - B&B Bantams, Barred Plymouth Rock. Res SCCL - Caroline Meche, Rhode Island Red Pullet.

CH. RCCL - Carey Bantams, Silver Sebright Cockerel. Res RCCL - Adam Poussom, White Wyandotte Pullet.

Ch AOCCL - Shannon Lejeune, Dark Cornish Hen. Res. AOCCL - Shannon Lejeune, Dark Cornish Hen

Ch. Featherleg - Tony Davis, Bearded White Silkie Pullet. Res. Featherleg Ben Pol, Bearded White Cockerel.

Ch Bantam Duck - Todd Spidel, White Call Cock. Res Bantam Duck - Ken & April Miskimon, White Call



Cockeral.

**Ch Bantam - Shane Morris.**

**Res Bantam - Shannon Lejeune**

### **LARGE FOWL**

Ch American - Matthew Waller, Rhode Island Red Cockeral. Res American - Shady Lady Farm, Black Jersey Giant Hen.

Ch Asiatic - Sydney Norris, Black Langshan Hen. Res Asiatic - J&J Farms, Light Brahma Cock.

Ch Continental - Brownlee Poultry Farm, Black LaFleche Hen. Res Continental - Skip & Jen Bittner, Black Copper Marans Pullet.

Ch English - Jamie Ducote, Black Orpington Pullet. Res English - Matthew Waller, Black Australorp Cockeral.

Ch Mediterranean - Steven Beaty, White Leghorn Pullet. Res Mediterranean - Steven Beaty, White Leghorn Pullet.

Ch AOSB - JNR Poultry, Black Sumatra Hen. Res AOSB - JNR Poultry, Black Sumatra Pullet.

Ch Guinea - Skip & Jen Bittner, Pearl Guinea. Res Guinea - JNR Poultry, Pearl Guinea.

CH Heavy Duck - Skip & Jen Bittner, Black Muscovy Cock. Res Heavy Duck - JNR Poultry, Gray Rouen.

CH Medium Duck - Matthew Webb, Black Cayuga Cockeral. Res Medium Duck - JNR Poultry, Buff Cockeral.

Ch Light Duck - Carley Hukill, Blue Magpie Cockeral. Res Light Duck - Foutch Farms, Penciled Runner Cockeral.

CH Standard Duck - Skip & Jen Bittner. Res Standard Duck - Matthew Web

Ch Medium Goose - JNR Poultry, American Buff Cock. Res Medium Goose - JNR Poultry, Pilgram Sex-Linked Pullet

Ch Heavy Goose - JNR Poultry, Brown African Cock. Res Heavy Goose - Addison Foutch, Brown African Cockeral

Ch Goose - JNR Poultry - Brown African. Res Goose - JNR Poultry, American Buff.

Ch Turkey - Jaydin Monsees, Bronze Turkey. Res Turkey - Jaydin Monsees, Bronze Turkey.

**CH Standard - JNR Poultry, Sumatra.**

**Res Standard - Jammie Ducote, Black Orpington.**

Ch Waterfowl - Todd Spidel, White Call. Res Waterfowl - Skip & Jen Bittner, Black Muscovy.

**Best in Show - Shane Morris, BB Red OE.**

**Res Best in Show - JNR Poultry, Black Sumatra**

### **Display Results**

Best Display with 505 points Tony Davis with White Silkies. Res Display with 485 points Jeff & Jessica Duguay with Birchen Modern Game

## **Junior Show Results**

### **BANTAMS**

Ch Modern Game - Madison Harris, Birchen Cockeral. Res Modern Game - Madison Harris, Birchen Pullet.

Ch OE Game - Romero Bantams, Black Cockeral. Res OE Game - Noah Vincent, BB Red Cockeral.

Ch SCCL - Quaid Durbin, White Plymouth Rock Cockeral. Res SCCL - Caroline Meche, Rhode Island Red Pullet.

Ch RCCL - Madison Harris, Black Wyandotte Cockeral. Res RCCL - Adam Pousson, White Wyandotte Cock

Ch AOCCL - Romero Bantams, Dark Cornish Pullet. Res AOCCL - Romero Bantams, Dark Cornish Pullet.

Ch Featherleg - Ezra Bergeron, Black Langshan Pullet. Res Featherleg - Coley Potter, Black Silkie Pullet.

Ch Bantam Duck - Addison Foutch, Black East Indie Hen. Res Bantam Duck - Addison Foutch, White Call.

**Ch Bantam - Romero Bantams, Dark Cornish.**

**Res Bantam - Romero Bantams, Black OE.**

### **LARGE FOWL**

Ch American - Matthew Waller, Rhode Island Red Cockeral. Res American - Matthew Waller, Rhode Island Red Cockeral.

Ch Asiatic - Breanna Huff, Black Cochin Hen. Res Asiatic - Sydney Norris, Black Langshan Hen.

Ch Continental - Sydney Norris, Silver Spangled Hamburg Hen. Res Continental - Sydney Norris, Silver Spangled Hamburg Pullet.

Ch English - Matthew Waller, Black Australorp Pullet. Res English - Torrie Frye, Buff Orpington Pullet.

Ch Mediterranean - Carson & Zack Duncan, Black Minorca Pullet. Res Mediterranean - Avery Thibodeaux, Dark Brown Leghorn Hen.

Ch AOSB - Alex Rodriguez - Black Americana Cockerel. Res AOSB - Carson & Zack Duncan, Black Sumatra Pullet.

**Ch Standard - Alez Rodriguez, Americana Cockerel. Res Standard - Matthew Waller, Rhode Island Red Cockerel.**

#### **WATERFOWL**

Ch Light Duck - Carley Hukill, Blue Magpie Cockerel. Res Light Duck - Carley Hukill, Black Magpie Cockerel.

Ch Medium Duck - Matthew Webb, Black Cayuga Cockerel. Res Medium Duck - Matthew Webb, Black Cayuga Cockerel.

Ch Heavy Duck - Matthew Webb, Black Muscovy Cockerel. Res Heavy Duck - Matthew Webb, Black Muscovy Pullet.

Ch Standard Duck - Matthew Webb, Black Cayuga. Res Standard Duck - Carley Hukill, Blue Magpie.

Ch Medium Goose - Torrie Frye, Sex-Linked Pilgrim Hen. Res Medium Goose - Torrie Frye, Sex-Linked Pilgrim Hen.

Ch Heavy Goose - Addison Foutch, Brown African Cockerel. Res Heavy Goose - Addison Foutch, Brown African Pullet.

Ch Goose - Addison Foutch, Brown African. Res Goose - Torrie Frye, Sex-Linked Pilgrim.

**Ch Waterfowl - Matthew Webb, Black Cayuga. Res Waterfowl - Carley Hukill, Blue Magpie.**

Ch Turkey - Jayden Monsees, Bronze Cockerel. Res Turkey - Jayden Monsees, Bronze Cockerel.

**Best in Show - Matthew Webb, Black Cayuga. Res Best in Show - Romero Bantams, Dark Cornish.**

#### **SHOWMANSHIP**

Jr Showmanship:

1st - Addison Foutch      2nd - Bethany Pousson

Intermediate Showmanship:

1st - Sydney Norris      2nd - Alex Guillot

Sr Showmanship:

## **Hurricane Preparation & Recovery**

### ***Building a Resilient Operation***

*(From USDA)*

#### **Buildings**

- Consult topography and flood maps when building new facilities, storing feed and hay, and moving animals. Consider the potential for higher elevation areas on the property to become evacuation sites.
- Locate buildings above the 100-year flood zone whenever possible, and construct buildings and other structures to a minimum wind rating of 140 miles per hour (mph), preferably 180 mph.

#### **Poultry Housing**

- Consider raising poultry houses when built to better accommodate flood waters—even 1 foot would be beneficial. At least raise the floor level above the surrounding ground.
- Move brooding chicks to the highest end of the house, if possible.

#### **Poultry Feed & Water**

- Make sure you have enough feed and water to last at least 2 weeks. Running out of feed for the birds is one of the greatest threats if the farm cannot be reached for several days.
- Check your feed inventory yourself and call the feed mill if you are low to schedule a delivery ahead of the hurricane.

#### **Safety**

- Make safety your first priority. Chicken houses and chickens can be replaced, but you, your family cannot. Use extreme caution due to the unsafe conditions presented by weakened trees and damaged structures, equipment, and electrical and gas systems. Be wary of downed power lines, especially downed power lines in standing water. <https://poultry.ces.ncsu.edu/disaster-preparedness-poultry/>



# Could Rare Breeds Benefit From Flock Breeding?

By Ann Charles

*"Flock Mating: The most common method of mating where ordinary farm conditions are prevalent. In this method males are allowed to run with an entire flock of females. Excellent fertility is usually obtained but parentage of offspring cannot be determined."*  
(From Principles of Breeding)

For close to twenty years I have worked with a breed that is not only rare, it is complex, and has a lethal gene (tufting) as part of it's genetic make-up. I believe the only other breeders that have to deal with a lethal gene are those of the Japanese Bantam. The 'creeper' gene is necessary in Japanese Bantams in the heterozygous state to give this breed it's characteristic short legs needed for exhibition. But is lethal when two copies are present.

I have used various breeding methods to maintain my flock with little or no outcrossing to other Araucana lines. I am currently using mostly pair matings, with some quads and a couple of pen matings with one cockerel to 4 or 5 pullets, and plan to soon start with spiral mating. But I have often wondered if there were methods to make breeding decisions on which birds to mate with which, other than my own personal choices. This brought back to nature, and the hen herself.

Nature does not have my same priorities when it comes to breeding Araucana, but when it is about insuring survival of the offspring — nature has been at it for much longer than any of us. There's plenty of scientific research that says a female bird may pick her mate based on which male is genetically most compatible with her and would result in the most vigorous chicks. Among them 'cryptic female choice' applied after-the-fact. But also, selecting which male she prefers beforehand based on his overall health and genetics.

Applying the idea of 'female choice', within flock breeding, might be a useful tool for perpetuating poultry breeds that are rare, or are in a small flock where a breeder does not have outside birds of that breed readily available to them.

With this novel take on flock mating's, I am not suggesting a free-for-all. I am suggesting the idea that a breeder might pick a good group of birds that may be starting to have vigor or fertility problems, flock breed them and let each hen (supposedly) pick her most suitable mate. And, she can do this apparently, in multiple ways.

It would be interesting to see the results of letting a small flock of hens with multiple males make their own selections one year and see if natural selection could increase vigor, fertility, and viability in that year's off springs as a group.

"Birds do indeed communicate via scents, and that odor reliably predicts their reproductive success.

"Based on odor, females seemed to be choosing with which males to mate with.

"In addition, the researchers believe that odors serve as beacons for hormone levels, current condition and overall health, and genetic background."

Source: Michigan State University

"It appears that females can pick who sires their chicks *after* copulation. This is so-called 'cryptic female choice'."

Isabel Torres PhD: Science editor and writer.

# Nocturnal Predators & Rodent Control

## Owls

### **Barn Owl Rodent Consumption**

"Many people are amazed when they learn how easy natural rodent control can be with a pair of barn owls on their property. Sometimes, people will ask how anyone can be so sure that barn owls eat an astonishing number of rodents. The answer is simple: pellets.

"Researchers studying the barn owl know that when an owl eats a rodent, about 12 hours later it regurgitates a pellet containing the bones and fur of the rodent that it cannot digest. Researchers have investigated barn owl nests and found these pellets on the floor of the nesting area. By counting them, they get a good idea of how many rodents barn owls are eating in a given period of time. The number emerging from most studies is astonishing: the average barn owl family consumes 1,300 rats per year and 3,000 rodents during breeding season!

### **Barn Owl Boxes**

"Because barn owls consume rodents so voraciously, the United State Fish and Wildlife Service has stated that these owls are the most economically beneficial species for humans of any birds. However, many people do not realize the benefits of hosting a barn owl family on their property.

"One thing that is certain is that it would be difficult to find a method of rodent control for which you have to do less work! Barn Owl Boxes install once and are literally maintenance-free. They will survive for years, are self-cleaning and naturally attract barn owls. (From: <https://barnowlboxes.com/>)

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**"Barn owls kill as many as three rats per night each, and a nesting pair will take an additional two rats for each owlet."**

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## Snakes

"Snakes, the much-maligned creatures are one of nature's most important natural predators. While most snakes are non-venomous and present no danger to humans, they effectively keep populations of rats, mice and other rodents in check. All snakes are carnivorous and many eat as often as once every three to four days.

### **Rodent Control**

"Because snakes have hinged jaws, they can eat prey three times wider than their heads. Although small snakes feed on grubs, snails and slugs, larger snakes eat rodents such as gophers, mice, rats and voles. Without snakes to control populations, rodents would reproduce freely, soon growing out of control. Snakes are significant allies of farmers and gardeners, decreasing the rodent population in fields, gardens, barns and grain storage facilities. (<https://homeguides.sfgate.com/effective-wild-snakes-rodent-control-81613.html>)

"Snakes, often unwelcome visitors under ordinary circumstances, could see a rise in their popularity. Rat and mouse populations may proliferate with the increase in hiding places for such vermin. Rat snakes eat rats and mice throughout the Southeast and the Midwest, where tornados have caused untold damage and led to huge brush piles.

"A rat cannot hide from a rat snake. King snakes, corn snakes and racers are also skilled predators that seek out rodents as prey. I presented these ideas at the Civitans meeting and pointed out that this is not the time to be killing snakes. . . ." (<http://archive-srel.uga.edu/outreach/ecoviews/ecoview110605.htm>)

## Fox

Through their cat-like eyes, foxes have adequate, but not exceptional, eyesight, very keen hearing and a highly developed sense of smell, which, along with their ability to move swiftly and quietly through almost any terrain, makes them formidable and effective crepuscular (dawn and dusk) predators in open country, and nocturnal hunters in areas of concentrated human habitation.



Fox will lie in ambush waiting for the sounds of prey moving through grass, which prompts their familiar leaping attack, or underground, which leads to quickly digging the prey out.

### **Adaptable animals**

"The red fox is the most widely dispersed mammalian carnivore in the northern hemisphere, and quite possibly, the world. Unlike wolves, foxes are not pack animals, and while they are generally, but not strictly, monogamous, they only stay together through the mating and rearing seasons.

"Red fox eat invertebrates such as insects, worms, crayfish and mollusks, small rodents like mice, wood rats, squirrels and voles, as well as rabbits, fish, reptiles and birds. Vegetation, such as fruits and seeds are eaten seasonally, and accessible human garbage will be inspected and scavenged.

"Now and then, vulnerable farm animals, such as chickens, ducks and lamb will be taken. While farmers used to routinely trap foxes, many now realize that the fox brings far more benefit in its constant predation on crop-destroying rodents and insects, than the harm they cause in taking the occasional barnyard animal, and that secure enclosures, particularly for hens, and guard dogs to keep the fox in the field, but out of the barnyard, are the key to discouraging unwanted fox predation. (<https://www.adirondackalmanack.com>)

## **Hawks**

The Ventura County Public Works Agency (VCPWA) has demonstrated that hawks and owls can be more effective than poisons for controlling rodent damage. Earlier this month, VCWPA presented data from its Raptor Study for levee Protection on using hawks and owls to control rodents, showing that raptor-friendly habitats reduce ground squirrel burrowing damage by 50 percent when compared to using anticoagulant rodenticides.

As part of the Raptor Pilot Study, VCPWA staff installed 14 raptor perches, one hawk nesting platform, and one owl nesting box along the Revolution Slough in Oxnard, which consists of flood con-

trol levees that have been plagued by burrowing rodents. During the 17-month research period, the staff recorded 50 percent less burrow damage to the levee where perches were installed while observing Red-tailed Hawks, and other local hawks and owls using the perches and hunting.

Expansion of the Raptor Pilot Study into a full program is underway and includes building raptor structures at other flood control facilities, including owl nest boxes. Rodents can cause significant damage and even failure of levees, earth dams and other flood control channels. A ground squirrel tunnel can be 35 feet long, and a single gopher is capable of moving about one ton of earth every year.

"We believe the VCPWA Raptor Pilot Study is the first to quantify the dramatic impact of attracting raptors and finds a natural, chemical-free way to control burrowing rodents," said Karl Novak, VCPWA Deputy Director of Operations and Maintenance.

"We think that comprehensive monitoring and continued expansion of the raptor program will result in cost effective and environmentally safe rodent control throughout our watersheds."

(<https://patch.com/california/moorpark/vcpwa-announces-results-raptor-pilot-study>)

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"Hawks and owls can be more effective than poisons for controlling rodent damage. . .

During the 17-month research period, the staff recorded 50 percent less burrow damage to the levee where perches were installed while observing Red-tailed Hawks, and other local hawks and owls using the perches and hunting."

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## Mating Up Breeding Pens.

By A. E. VANDERVORT, Sidney Centre, N. Y.

In the production of every living thing one set of rules holds in the main—"like produces like." Seed from plants of inferior quality of any kind will produce a plant like itself. Turnips will not grow from radish seed, nor will wheat grow from millet seed. The most valued live stock or products run out if neglected or misused. At the same time nothing is yet so good that it may not be improved upon, and if it is our intention to have better poultry it is necessary for us to select for producing our future stock the very best we can have. Quite often one is inclined to go out and buy from others when he might far better have selected from what he has at home. Too much care and judgment cannot be used in selecting females, for so few good fowls of any kind have ever been grown from a hen of medium quality, that to hope to have good stock from poor quality hens is useless. To be more explicit, if fine prolific laying hens are desired, they must come from hens that have been good layers from pullets up to two-year-old hens. Winter layers will not be likely to come from hens that do not lay well in winter, nor will hens that lay a few eggs as pullets improve your stock of layers if used as breeders. Bear in mind, however, that if none of your hens lay at all in winter, the main fault may be yours, and not the hens'. In making your selection for breeders to produce laying hens, we take for granted that you have handled your fowls so well as to have them lay at least fairly well in winter. If not, the fault may be yours and not the hens'. If this is so, it would be most difficult to select the best winter layers, when none of them have laid many eggs. Of one thing, however, you may be certain; if but few eggs are laid by one or two specimens, in spite of your treatment, those that do lay may be depended upon to produce good laying pullets. All plans for selecting hens to produce pullets that are naturally good winter layers fail when there are no winter layers to select from. Under such conditions you must first of all learn to care for hens so that they will lay in winter.

In mating for fertile eggs, no male bird equals a strong, sturdy, vigorous cockerel which was hatched early last spring. A very young or immature male is not desirable. A young cock bird that grew well and holds his vigor—that which is needed in strength and vigor—next to these cock birds that are under two years old that have strength and vigor of a yearling.

In mating black fowls for rich color, select a male of the richest possible color, one with plenty of sheen and gloss, and mate him to females some of which have the same rich color and some that lack the sheen but have a good deep black without the sheen. By so doing you will have both good colored males and females. As the sheen is more natural to the male than female, there is a chance of having too much color on males that come from the very rich colored males mated to females as rich in color as they are. From such matings you are likely to have the best colored males from coal black females that lack the green sheen. It is not unusual for the males that come from very rich colored females to show some red in their plumage. This comes from an excess of color, but females from

such hens are likely to have very good colored plumage.

In mating Brown Leghorns the best colored females will come from males whose hackle and saddle run into the orange shade, with little or no stripping in saddle. The dark, rich colored males that have rich black striping in both hackle and saddle will not produce the best females. They should be mated to females that are entirely too dark for exhibition. Such matings will produce the best males. In mating all kinds of Leghorns be sure to use males that have as nearly perfect Leghorn combs, wattles and ear lobes as possible, for in no other way can you expect to breed a good looking Leghorn. Do not tolerate for a breeder a Leghorn that has a poor comb or ear lobe. Nothing adds so much to the beauty of any flock or fowls as uniformity and fine appearance head points. Good heads and combs are of importance because of their beauty. Poor combs will detract so much from an otherwise good specimen as often to lose it a place in the award list. At the same time a beautiful head, comb, wattles and lobes will add considerable to its value if sold. Select at all times for breeding, if possible, specimens that have handsome heads and bearing; this will add value to your flock. When visitors come to look your flock over, handsomely finished heads add to the value of all you have to sell for breeding or exhibition. Too much care cannot be given to all these points of value in mating your fowls; no matter for what purpose intended, uniformity in the flocks or yards has its influence for good. Much of the popularity of the White Leghorns comes as the result of all looking so much alike. They are no better for the purpose kept than other Leghorns, but they are uniform, both males and females, in color, and the males look so

**LETTER NO. 6.**  
An inquiry will at least put you wise as to what we have to say and the offers we have to make; we answer all of them promptly. If there is any criticism to be made about our trap nests, we want to know it; and if you criticize correctly (and we shall never say a word), why just send your nests back and get your money. It all depends on you; that's easy, but here's another; these trap nests will live up to what we say they will.

**\* | S. P. Y. | \***  
We especially recommend you to buy attachments; they can be fitted to any box; save freight; save worry. To large poultrymen we will sell complete sets of parts in lots of 100; price, \$10.00 per 100 sets. Write. Address,  
**SOUTHVIEW POULTRY YARDS,**  
Trap Nest Manufacturers, Outfitters,  
North Grafton, Mass.

much alike, so do the females, as to win favor for this variety.

When growing white fowls, for eggs or for market, select males that are very strong and vigorous, and if they show a tendency towards creamy color in plumage it will help to give a rich color to the skin and shanks. This is best when they are grown only for market, but when we wish to have clear, clean white plumage, including the quills, for exhibition stock, have the plumage of the fowls used as white as possible throughout, even if the shanks are not so bright yellow. It is quite difficult to get clear white plumage on chicks from males that have bright yellow shanks, or that have any tendency to creamy color in the plumage or quills of feathers. Color comes largely from the male, and you cannot expect to get a good colored chick from poor colored males.

Size comes from the most part from the female. If you wish to grow large chicks of a breed, select large hens to breed from. If you wish larger Leghorns than you have, use your largest Leghorn females to breed from. This same rule holds throughout all breeds. The female should be the very highest quality when breeding for exhibition.

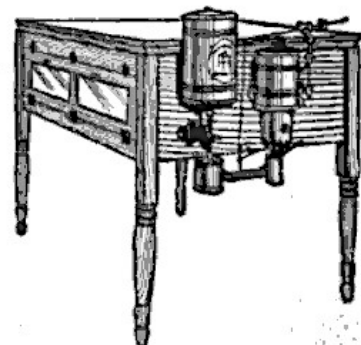
## You Can Build This Best Incubator Yourself and Save Money

10,000 intelligent poultry men and women have proven that my way of securing the best incubators is the most profitable. Do it yourself. It's as easy as A B C. I will save you the extras, the freight, the cost of high priced labor and finishing, and give you the best incubator that money can buy, and a big saving in cost over all high grade machines. You can do it with your own hands. Just my parts and simple directions, which anyone can understand—a saw and a hammer—these are all you need. For 25 years my way has been followed by good poultrymen. They know I have overcome the imperfections and drawbacks in other machines. My plans and parts will give you absolutely the latest and best.

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This tells the big facts about incubators. It tells why my combined damper and flame regulation, tandem thermostat, heat distributing bars, and automatic ventilation should be in every incubator. These are the vital parts of an incubator—the greatest inventions that have been made since the discovery of artificial hatching. A boy of twelve can build an incubator with my plans and parts. I'll show you the way to more money and better chicks. Just sit down and drop me a line. Say "Send me your Incubator Book"—it's FREE.

**H. M. Sheer Co.**  
Dept. 4 Quincy, Ill.



## Special!

To owners of other makes of incubators—do not put up with inferior features. My lamps, regulators, burners, tanks, heaters, thermostats and other appliances are adaptable to all makes of incubators and brooders. If I have not what you need, I will build it for you. This is good news to thousands who do not wish to purchase a brand new incubator, and yet who realize they can get better results from Sheer's appliances. When making repairs, use Sheer's lamps, regulators, etc., and note the great improvement in efficiency. I will supply the appliances you need. Write me personally.



Now if mating Barred Plymouth Rocks, select the light colored males to produce light colored chicks, and keep in mind that the chicks usually, in fact at all times, come darker in color than the male they come from. Dark males will bring very dark pullets. To have clear, bright colored females in this breed, use light colored males, and to have dark colored males use the darker colored males. If you desire to have exhibition colored males use males of exhibition color, with the females a shade darker than the males. Females from such a mating would be too dark for exhibition. For exhibition females, use males that are quite light in color with exhibition colored females.

With all buff colored breeds or varieties use males that are stronger and richer in color than the females. If the breast color of the male is about two shades darker than the breast of the female, this is best, provided the male is of a rich golden buff with no red shading in his plumage. Never make use of the reddish buff color, either in males or females, in trying to produce good even buff color. Buff is one of the hardest shades of color to obtain of good quality, and it can only be obtained and maintained when the true shades of buff are used. The tendency is for too light a shade of buff. The color should be true buff and very even all over, and so close and dense as to fill the whole web of the feather under color. Buff of a lighter shade than the surface color.

Now these few lines are for the beginner. Experienced poultry breeders do not need this information. I don't pretend to know it all myself, but what I have written is from practical experience, observation, and working among some twenty breeds for a lifetime. This is not office view of things, and I trust the information here given will do some of the readers some good.

#### Wright's New Book of Poultry.

One large quarto volume, 600 pages, with 45 full-page plates in color and black and white. Durably bound in cloth, gold lettering, gilt edges. Published by Cassell & Company, 43-45 East 19th Street, New York.

The name of Lewis Wright has been known to poultry fanciers everywhere ever since he published his, up to then, exhaustive work, "The Illustrated Book of Poultry," thirty-five years ago. Mr. Wright was a young man then, but for a long time his book was the standard work on poultry in England as well as America, and for many years fanciers were of the opinion that, beyond some little revision and some notice of new varieties, it was hard to see how the work could be improved or whatever new there was to write about.

But the advances in poultry culture slowly but surely revolutionized the industry and the book became pretty well antiquated before thirty years had passed.

A very cursory glance through the pages of Mr. Wright's sumptuous "New Book of Poultry" shows better than any other illustration what great changes and advances have taken place in poultry culture in the last three decades. Even in regard to the treatment of varieties it is noticeable how much more definite are now the rules and practice of breeding.

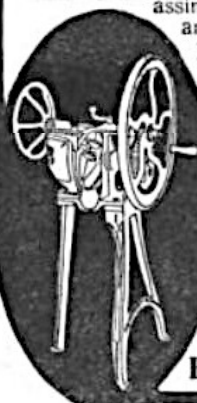
"The New Book of Poultry" is not in any sense a new edition or revision of Mr. Wright's earlier work, but a "new" work, entirely rewritten from first to

## EGGS IN WINTER

**M**AKE a lot more money from your poultry. Let me tell you how to get more eggs from your hens in winter—yes, actually more than you do in summer. To make your hens lay every day in cold weather you must feed them the same kind of food they get during summer. Food that contains a large quantity of protein, the substance that makes eggs. In summer your hens get protein from grasshoppers, worms and bugs. But now all these have gone and it is up to you to provide this egg-making material for your hens. Fresh bone is the food to feed. Just such bones as you have in your steak or soup, bones that can be easily and cheaply obtained from any butcher. Such bones contain large quantities of protein. Of course, it makes all the difference imaginable to your poultry how this fresh bone is prepared. When cut in a Humphrey Always Open Hopper Bone Cutter the hen's digestive system can easily assimilate the protein and different nutritive elements. Thus prepared fresh bone is the cheapest and best egg-making food known. It is good for the whole flock from the youngest chick to the old cock.

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**HUMPHREY, Green St. Factory, Joliet, Ill.**



last. Its scope is thoroughly modern and really world-wide; every modern method of raising poultry for profit (and this is ever the dominant aim of the work) is described, whether European or our own. In essentials, European methods and our own are practically identical.

The distinctive feature of Mr. Wright's book is its thoroughness. We have not seen a more exhaustive poultry book than this. And to assure its absolute authoritativeness, it is characteristic of the author that he should have gone to the highest authority (in his opinion) on breeding for a contribution, rather than express his own expert opinion, however weighty. These two features—thoroughness and authority—distinguish each of the thirty-nine chapters of the work, twenty-four of which are given over to the full individual discussion of every breed, and fifteen to the treatment of Poultry Houses and Runs, The Science of Feeding, Practical Management, The Egg Setting Hen, Incubation, Rearing and Care of Chickens, Poultry for the Table, Poultry Farming, Exhibition Poultry and Utility, Pedigree of Line Breeding, Practical Breeding and Rearing of Prize Poultry, Exhibiting, Shows, Judging, Trimming, Technical Terms, Poultry Diseases and Vices, etc., etc.

On the easy terms upon which it is now possible to own "Wright's New Book of Poultry" (see announcement elsewhere), it is hard to find an excuse for its absence in the library of any practical poultryman. We believe that for even a few of the valuable suggestions it contains the book is worth very many times the price to any fancier who can utilize them.

#### Rheumatism in Pigeons

Until I kept a flock I never realized the thousand natural shocks a pigeon is heir to. Among the most insidious of these is rheumatism. If they sleep near an open window, or in a draft, it is pretty sure to develop, frequently in the form of wing disease. The elbow joint is the part most affected, probably on account of being the most exposed and liable to become chilled. The main symptom is a lump on the wing and feverishness.

A bird so afflicted should be placed alone in a pen and fed plain food. Pluck the feathers around the affected joint and paint the swelling with tincture of iodine, and it will gradually disappear.—*Phoebe Thayer in Country Life in America.*

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