Oriental Rollers - Stipper / Almonds - photos Mick Basset.

The **Pigeon Genetics** Newsletter
News, Views, and Comments

(Founded by Dr. Willard .F. Hollander).
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(Where beginners and Pros work together for the good of genetics)

Issue "A" (one of two) November 2017

TOPIC (What do we have here ?)

Shoibal Sabbir has had quite a number of genetic test projects and observations ongoing for some time, and we thought that you would find them interesting. This Issue we will show you one of his COF hens. Classic Old Frills are one of, if not his favorite Breed. This hen is a daughter of a Cock that he unfortunately lost and he hopes that she is indeed an Almond like her sire. Here are a series of photos of her as she aged. She is Ts, fs, blue , hetero (e) and hoped , Stipper.

Below top left are two young that she has produced , the one on the left has developed into a dilute brown (Khaki) bar. The other is similar to the dam. He hopes that it is also an Almond. Note that both birds have some down hair as opposed to either being actually naked .

The areas where we can still see hints of the base pigment are in the tips of the primary and secondary flights and in the tail. This tends to appear rather smudgy in tone.

I struggled with concluding that this hen was actually an Almond. I instead encouraged Shoibal to wait until she matured , and to see if her sons were Almond after mating her to a non-Almond. She has been mated to a solid black. Below are previous young from silver cock.

The wing shot is of the youngster on the right as it began to feather out.

This is a good example of a number of different traits that each tend to do the same sort of thing to base pigments. Stipper "breaks" base pigment to a whitish effect and diminishes any bronze. The full Complex Toy Stencil gene also whitens any coarse spread areas . Frill stencil whitens smooth spread of the tail band and near the tips of the primary flights. It also may affect any feathers expressing Sooty factor. When we consider how little base pigment is remaining on a Stipper hen to begin with , then apply the Ts Complex and the (fs) gene to those areas , we have virtually nothing left except some residual bronze. Then if we add a dose of recessive red , it is easy to see why the result will be quite red or yellow overall.

Being a hen and possibly pure for Stipper , we are not likely to see any additional carried base pigments .

Almond young are short downed similar to dilutes , so in the photo here on the left , the far left squeaker would be a dilute , and the smaller young on the right may be an Almond which must be a male . In that case , he will express his base colour.

Normally when stipper breaks the expressed base pigment , it allows the second "carried" base pigment to show which may add an additional colour tone .

My Almonds were virtually naked in the nest as were my dilutes. The range of down hair and its colour are also controlled by modifiers , that will require considerable more work by careful breeders keeping very strict records and many photos in order to reach any specifics in that regard. We have seen testimony in the past stating that some birds were indeed beautiful Almonds when in fact they were either Qualmonds or the Hickory mutation. Obviously some Breeders have not been successful in keeping good records in their Breeding Programs , but believe they were!

The hen's tail does have a slight bit of black in the second feather from the left. We will follow this in the future if possible.

TOPIC : Another look at Undergrizzle and its expressions as compared with other somewhat similar traits.

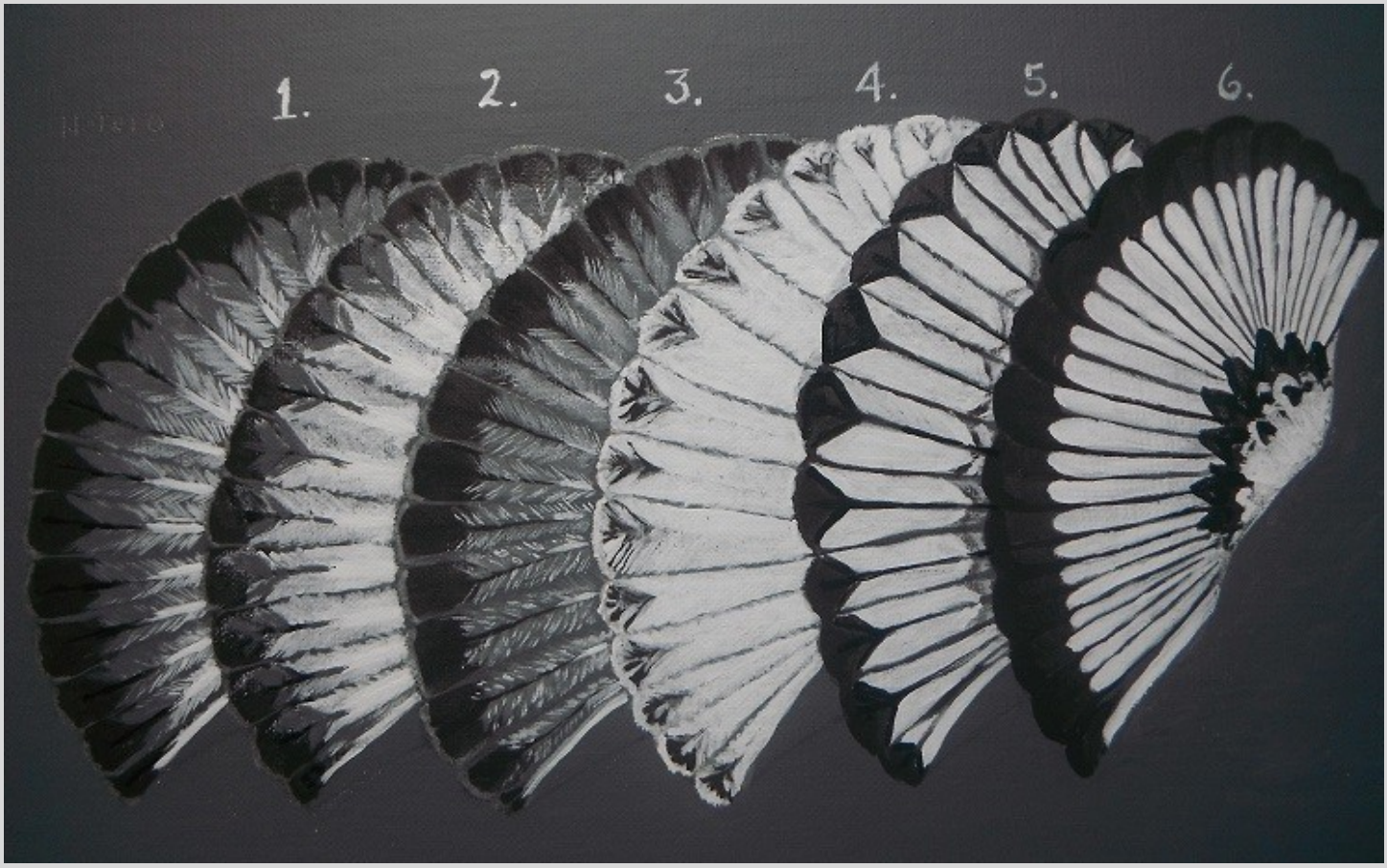


Diagram explanation : Six tail expressions from left to right : No.(1) Heterozygous Undergrizzle (Ug), No.(2) Homozygous (Ug)., No.(3) Heterozygous Classical Grizzle (G)., No.(4) Homozygous (G) Storked., No. (5) frill stencil ., and No.(6) Flash grizzle . In the first four we used Patterned tails, then for the last two spread blue / black.

No.(1) Hetero (Ug) may be much lighter in the nest to the point of not showing any black pigment at all but instead a soft grayish white that may have a black edging to all feathers similar to the phenotype of a Silver Seabright Bantam hen. Reversion takes place during the first moult so that the youngster may be totally coloured with just a slight whitish midrib half way up each tail feather. This may also leave pseudo white bars on the shield. Some (Ug) birds show a frosted effect on the underbody area .

No. (2) Homo (Ug) may also be near white as a fledgling , but revert to almost normal after the first moult. The whitish effects in the tail and wing bars is usually more enhanced.

No.(3) Hetero Classical (G) , is what is referred to as "Salt & Pepper" in the pattern series , and " Pepper head " in Blacks. They change very little after the moult except to show a slightly lighter tone overall in Pattern series birds .

No. (4) Homo (G) is what we call "Storked" , and is mainly all white with just a bit of colour on the head and neck region and at the ends of the Tail feathers and primary flights. They also remain about the same throughout life from the nest. Modifiers such as (Ug) that darken with age may cause reversion in these birds to some extent.

No.(5) frill stencil. Here is where we may see perhaps as many as a dozen different versions of this trait from almost no expression at all to a very white bird overall with a fine lacing on all feathers. Due to the many very small feathers on the head and upper neck region , they may appear to have no white and only colour feathers as we can see only the

coloured tips. This gene effect may undergo changes over several moults , only to change back again . This instability is not yet understood , however the modifiers that also may be present are a possible explanation.

No.(6) This is Flash grizzle , and like Undergrizzle may not actually be a part of the "grizzle" family at all. Young appear with the full expression in the nest and do not change after the moult. It is a recessive autosomal gene . It may be bred in conjunction with undergrizzle. Either or both may also express with the "pencilled" gene.

Non - pied hetero undergrizzle youngster - Barry McPhee.

Homozygous (Ug) - Jith Peter.

Heterozygous Undergrizzle - Bob R , Breeder.

Homo Flash grizzle - Prasad Pamadath.

TOPIC : Extended Almond talks .

Lets discuss the standard requirements for the Almond phenotypes . We know that some Countries have set guidelines for the phenotype of their Stipper / Almonds such that it is referred to as a "Classic Almond" in Countries like the U.S.A. In others it is called Stipper , and it is expected that it conform to an established set of rules in some Breeds ., set before 1735 A.D.

Ideally they should be the tones of an almond shell colour over the entire bird along with scattered Base pigmented feathers ., with three distinct colours , base pigment , bronze , "including" Stipper white break!. in the Tail and flight feathers .

The Stipper gene has one function and that is to "BREAK" base colour. It would make a pigeon **white** if it had its way. That nearly happens with about 25% of the males when two Almonds are mated together. The "pure" males would receive two infusions of the Stipper gene in order to be in this category and due to an added semi-lethal gene , most do not hatch , or if they do they die shortly after , or rarely may live with "bladder eye " problems .

The hens require only one infusion from their Sires and therefore can be pure (hemizygous) for the sex-linked trait and not have the semi-lethal effects.

Other traits resist the whitening effects of the Stipper gene. Bronze (s) is/are basically not affected by Stipper much at all. Darkening traits such as T-pattern , saturated T-Pattern, and some of the other darkening modifiers such as Dirty (V), smoky (sy) , and Sooty (So), either individually or in unison resist the Stipper breaking action.

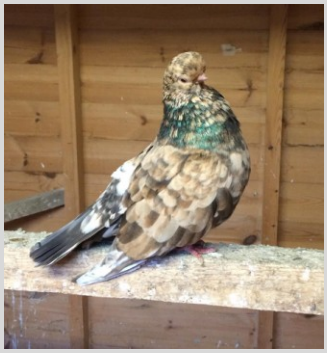
So, what can we make of cases where birds that are basically only at best "bicoloured" , being placed first and or Champion in a class that is supposed to be "Classical Almond" ?

There may not be a standard established for many breeds . Other alleles of the Stipper gene at that locus can resemble some Almonds , but be genetically different. Since they can be carried by Almonds , mistakes happen. We also must realize the fact that "fads " take over in the U.S.A., and the National Society Book of Standards is generally ignored by some judges. Specialty Clubs with just a handful of breeders tend to set the rules . I have been told that these rules often may not be forwarded to the NPA for inclusion as up-dates to the Standard Book.

Here are some examples of Classical Almonds. They have been bred to include Blue series (black pigment) not spread factor., T-pattern, Kite bronze, heterozygous for recessive red, and Stipper white break.

The Stipper break may still show as "some" whitish feathers or portions of feathers . Then we should see considerable residual bronze enhanced by hetero rec. red ., and remnants of the base colour in the form of Black flecks and individual whole colour feathers . Small patches of feathers, and white flights or whole tail feathers are undesirable , unless a pied. Males that are hetero for brown may also express some of the brown base pigment of the second chromosome made visible by the Stipper breaking action on the main base colour. See explanation of P.E.V. farther down.

Classical Almond ,T-Pattern Stipper ~ Travs Pigeons .



Dilute Classical Almond - James Ellison.

Classical Almond - Pavel (Pvl) Lofts.

Spread pure ash stipper ~ Anwarul Kabir.

T-Pattern Stipper hen no (e) ~ Barry McPhee.

(e) = recessive red gene.

She is dam of the Dark Check right bottom.

Mick Basset Photo German Modena . Magnani

The stipper gene expressing differently .

Dark Check Stipper no (e) ~ Bob R.

(Special thanks to those who have made their photos available for use in our Newsletters !)

Same cock bird expressing juvenile feather of mainly residual bronze only ,then front view as the "reversion" takes place with 1 year aging. ~ Bob R. Breeder.

Stipper as you can see , has many faces. It may look entirely different simply depending upon which Pattern is involved .

Here is a very kind response about our Newsletters from the former Editor for no less than twenty-five years, Dr. Lester .P. Gibson : (You are doing such a wonderful job with the newsletter it makes my heart beat for joy. The last issue was well written and very informative about some topics that are confusing to many. One little tidbit on break where Almond and some of its alleles are concerned: usually the break in the flight and tail feathers is in a modified "V" shape. All the best. Lester Paul Gibson.)

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The reason why we see this "V" shaped effect is due to the STRUCTURE of each feather and the manner in which pigment is distributed .

We have talked recently about the many alleles at the Stipper locus. These are mutation alternates that have undergone a genetic change that makes them a bit different from one another yet they are all located at the same spot on that sex-linked chromosome.

Some are quite different , while others are very similar, this fact explains why we often see people making mistakes as to which trait they are using in their breeding programs.

We already mentioned that the Stipper gene does not have much breaking effect on BRONZE , however Stipper does break down spread factor leaving a white bird with some black sprinkles . If bronze is present and it does hold , it will be mainly in the neck region.

This may depend upon the type of bronze and the source . Usually Kite bronze (K) is the expressed bronze.

Hickory is a mutation that is about mid-way between Almond and Faded. The tail has slight flecking , and the tail band remains quite distinct. Bronze colouration if present , is virtually not diminished at all. Reversion , while slower than in Almonds , does take place over time. Pure cocks are very light . This allele at the Stipper locus is sometimes mistaken as Almond.

The **PEV** (Position Effect Varigation). It inactivates (to varying degrees) the mutant at a particular locus with respect to how close it is to the heterochromatic region of the Chromosome. So when St inactivates the base color (black, brown or Ash) that it is linked to, what is left is whatever else might be present and isn't being inactivated…..such as het rec. red, het. opal, reduced, dilute etc. This lets that "whatever else" to show
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through where the inactivated gene would have colored. (Paul Gibson March 2006 PGNV&C.)

NOTE FOR THE BEGINNER….remember that Ash red is dominant to Blue, so the Ash will normally cover the Blue except for the occasional flecking. When the Almond gene, St, is linked to Blue, it is “turning off” the Blue color production, so the het Ash red/Blue Almond will be Ash red and little blue will be left to show. Some of the Ash is also affected by the position effect varigation of the Almond so that the bird has the look of an “Almond” but just not a Blue Almond. (PG).

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Levi photo.

Danish Tumbler (so-called "brown" Stipper) , most likely Brander bronze as opposed to Kite bronze.

stipper - Almond linked to Ash red. - Anwaril Kabir.

note: linked means - "on the same Chromosome ".

See July '15 , August '15 , Sept. 15.,and October '15 for detailed genetic explanations regarding semi-lethality ., and other aspects of the (St) gene.

Spread factor Almonds are usually "bi-coloured" due to the action of the STIPPER gene causing enough BREAK so as to render the bird virtually white with scattered residual flecks of the base pigment . These are referred to as sprinkles , years ago called black splash, black Agates and black"pencilling". Confusion has been created over the years by the Colours having been named differently in the Countries that have a major influence on the Hobby. Germany , England and the U.S.A. have each had significant influence but not as a unified effort , thus varying opinions .

The "Almond" in North America was thus so named for its common residual bronze tone caused by the resistance to the breaking action of the Stipper gene.

The Danes named it Stipper in recognition of its 'stipple" effect especially on Spread factor birds. Others confused things by naming the bronze toned self patterned birds "Brown" stippers , which have no actual "brown" pigment involved. The dark bronze that they achieve appears to be the influence of Brander as opposed to our KITE bronze , but no acknowledgement of that has been made to my knowledge.
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Topic : Reduced (r)

We often see or hear where someone states that a bird is "reduced" . The question is "reduced what" ? Reduced is a mutation that is recessive and sex-linked . It generally reduces the overall colour to a softer rather diminished tone. Kite bronze , if present , can be seen usually in the coarse spread areas of shield patterns.

reduced spread blue/black masking checker showing some bronze - Stephen Scott.

Reduced young are usually quite light to near white with some softly coloured smudges until the first moult. Then the neck appears "frosted ' and the typical laced effect is seen on the wings.

The reduced locus has another mutation sharing the space called rubella (r^rb) . Rubella is similar in all aspects except that it lacks the whitish neck feathers . The tail band is usually lighter and expressing two or more banded lines.

The reduced locus is quite close to the dilution locus and a cross-over between the two has about a 7% rate.

All basic rules in pairing recessive sex-linked genes can apply when introducing this factor into a different Breed or strain.

TS & Ice factors for comparison. - Steve Scott.

Reduced blue T-pattern (see tail band) -Steve Scott.

Reduced Spread blue black masking check -S. scott.

TOPIC : Feather ornaments

Ornaments or feather structure anomalies in pigeons come in many forms . The common ones are Crests , rosettes, nasal tufts , Hoods , Muffs , supernumerary tail feathers , etc. Usually the first mutation we see is a Shell or peak crest. The Crest s are recessive autosomal genes . However it is not quite that simple and there are many tests that have been done with varying results, unidentified modifiers are suspected .

Clint Robertson - mane , Chain, Hood

Mike Walters Sr.-Shell with rosettes

Rakin Habib - Peak crest.

Amitav Ghosh - Shell and Rose Tuft.

Melbourne Pigeon Society Facebook Group- Shell and nasal tuft.

The two main crest expressions are Shell Crest and Peak, with a miread of contridictions from Breeding tests in lofts , but at University studies found to both be by the same gene . Crest a result of modifiers.

Some shell crests have been developed to have rosettes at each side of the head , others without .

The nasal tuft is recessive to plain head .

The Capuchine and Jacobin Hoods are selected ornaments that are comprised of several traits that have been selectively enhanced for length and position.

The Spanish Chorrea and the Chinese owl have been developed to express various other ornaments such as neck cravats , breast cushion , Pantaloons , and shoulder Rosettes. Crosses with Chinese owls revealed that peak crest may be carried but suppressed as part of the cravats .

Other feather anomalies will be discussed later .

TOPIC - What genes make white Pigeons ?

(1) The most well known mutation is "**recessive white** " with Bull (black) eyes. This gene stops all pigment colour expression in the skin, feathers , beak, , and toenails. It literally stops the expression of any colour . The bird must be genetically PURE for the trait and therefore PURE WHITE". A separate set of genes may affect eye colour but usually they are without colour.

(2) The next most common is probably the all white expression of the **homozygous Tiger grizzle ash-red**. Repeated selection can create an orange eyed white that has no red or black flecking and appears as a pure white bird , but in reality some pigment is evident if only in the eyes..

(3) Then there are the **Stipper alleles whereby a double infusion** of the gene causes males to be PURE (homozygous) for that gene , that, if they live will be almost white with perhaps a few coloured feathers around the neck area . Again they are not PURE white but express colour pigment in the eyes and odd feathers and tend to darken with age as seen at right on this homo Faded Texan Pioneer .

(4) Then a somewhat newer mutation "**Dominant white**" that has been created in flocks of archangels by Lester .P. Gibson ., and in other Breeds elsewhere . These usually have a fair amount of colour in the nest but moult eventually to almost all white ., but again usually have lingering coloured neck feathers .

(5) "Pearl eyed whites" are found in many Tumbler breeds in particular ., and no one has a good explanation as to what is going on genetically speaking. These Tumbler Breeds also have pearl eyed Baldhead designs . Normally pure whites and Bldheads have Bull eyes. In these Baldhead Tumblers cracked , broken , split , and odd eyes are common. Selection seems to have played a major role over the centuries in fixing the pearl eyed trait on otherwise white birds .


(1) Bassett photo


(2) Aust. NPA Group.


(3) Levi photo

Photo (3) could easily work as well for the Dominant white , as often the phenotypes are very similar . A difference is that Dominant whites have more colour in the nest than one would see in the nest of Homo stippers / and alleles and they would be long downed.


(5) SvDz Althollandisher.

TOPIC - Darkening Grizzle effect after moult.

Dam - T-pattern Classical (G)

Son at fledging (psedo Storked)

Son after moult - Light Grizzle (G^S).

John Smillie wrote in Strictly Colour Genetics for Pigeons Facebook Group : Mother and son at weaning and at present...is this common in grizzles to get more colour? I normally work with tiger grizzle so see the opposite.

Bob Rodgers wrote : The obvious question is , what was the sire. The young started out as a "storked" bar phenotype , and appears to be an allele of (G) referred to as Grizzle light , or Grizzle slight (G^S) named , I believe by Tom Barnhart some years ago. It is not usual for Classical Grizzle to darken with age , but (G^S) may be slightly different , I have not worked with it . The dam is also pied which should have no bearing on this situation. Interesting pics.

John Smillie: the father is ash red spread dilute split for blue.

Bob Rodgers :There is a possibility that Undergrizzle is also present , and if so a whiter nestling is to be expected , that will indeed become darker after the moult .

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Here are two corrections from Sept., and Oct. issues . I noticed that I wrote c//c as the pattern symbols for my ash bar ASR. That of course should have been +//+ as c//c stands for pure barless.

Then Grigoriy Zilberg allerted me to the fact that I had inadvertently typed (Ba) as a symbol for ash-red which of course must be (B^A) as Ash is dominant over Blue and brown. He also questioned the formulae that I used for all genomes given . He prefers Joe Quin's method of presenting the sex-linked genes first then the autosomal. I prefer to list them in the order in which I would verbally describe them, placing the most influential traits first then downward . Perhaps we can give both in future.

That is it for now but we will be sending out an Issue "B" shortly . We always enjoy hearing your feed-back , so do not hesitate to drop us a line or more . That is it from the loft for now ... Bob , Canada and Jith, India .
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