



$e/e, Ws/?$ In molt (recessive red whitesides)



$ee/ee, Ws/Ws$

$ee/ee, Ws/+$



$ee/ee, S/+, (G^{ws?}/G^{ws?})$



$ee/ee, S/+, (G^{ws?}/G^{ws?})$

Black whitesides.

(spread whitesides)

Notice that these have white head feathers in the head region and mismarks elsewhere.

2014 EMAIL PIGEON GENETICS NEWSLETTER FEBRUARY.

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Page 1335

EDITOR:

This issue marks the beginning of my 32st year as editor of the Pigeon Genetics Newsletters.

Last issue I said it should be possible to bring in new colors or traits from other species. Now I will tell you that that may work for some but not for others. Mules from horse crosses (horse X jenny ass) are sterile but rarely are fertile. Hinny (Jack X horse) never are fertile. The same type thing in Muscovy ducks (Mallard drake to Muscovy) produce sterile young but the reciprocal cross produce sterile young but some of the hens will lay small yolkless eggs. Dog X Coyote will produce young but the males are sterile and the females produce pups in late fall instead of spring and the pups do not survive the winter. So you see, it is not always the same mechanism and there may be several ways to prevent the species or genera crosses from working.

It takes years of perseverance to circumvent the barricades set in place to keep species stable.

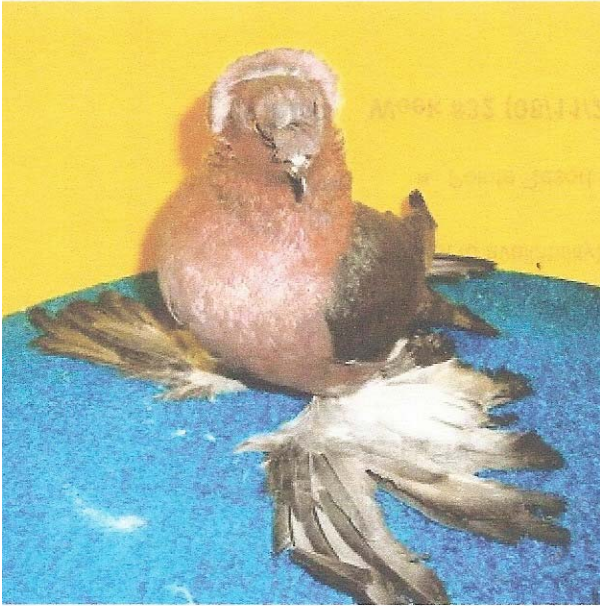
1336

EDITOR:

Rick Liemann produced this Archangel English Trumpeter.

He states, "This 2007 hen was our first one shown at Des Moines in 2008, we have better quality but lose some color so you keep going back to the color. This year we made another step forward. Next year I hope to be able to show a team of 8 to 10. I do have the gene in my Indians but I put them into my reds and yellows for the pale gene (gold). I have gold as well as gimpel bronze in my Indians, now I just need to bring the color out of my rec break it down. I have gold black and blue bar wing and copper black and blue wing, last year I started crossing the white wing so I will show you some in 5 years if I am lucky."

There were a lot of comments in the Indian Fantail Forum.



GARRY GLISSMEYER COMMENTED: excerpt

It takes a long time to accomplish such a feat...and when you do, after 8-10 years of labor and raising hundreds of birds to do it...someone will offer you \$25 for one☺.

RICK LIEMANN:22jan'12

Garry, I agree with you 100%. I want to tell how we started with this project, back in 1995 my son and Frank were traveling to a show and Richard kept asking Frank that he would love to see a 2 colored pigeon in red and with black. We both said that would be wonderful but no such thing as we laughed. Then in Oklahoma Richard went and saw the Archangels and we laughed again. Well, while he was going on about it a Rare Breeds gentleman walked by and said "can I take your son over to the Rare Breeds section and show him something", I said yes. There he met Lester Paul Gibson and he introduced us to an Arc/King cross called Gabriel which is an Arc colored King. Well all the way home from Okla Richard had his heart set on going to see Paul's project birds and that I how we started in 1996.

EDITOR:

After reading this narrative by Rick, I got to thinking about all the animals and birds that have this 2 colored phenotype (red of bronze or red ventrally, colored dorsally) In animals we see it in Squirrels (wild), Rabbits (domesticated), Dogs (domesticated), and others. In birds we see it in Gimpel finches, Robins, Passenger Pigeons, and others. So it is not a unique color combo. In fish it is seen in several species in the wild such as the red-bellied Piranha and the Sunfish.

DINA MERGEANI WROTE: slight editing

All my F1 Nun X self [crosses] have white navels and some B1 (NunXSelf) self have it also. I agree with you that it could be a sign of hetero Gazzi. But I wrote about white shields of Nuns which are present in combination with colored flights. These colored flights are a sign that melanocytes can migrate. In Swallows, there is a white area that corresponds to arm and shoulder, a colored area that corresponds to forearm and colored flights. In my old post, I supposed the reason for white area of Nuns shields and the reason for white area of Swallows shields are alleles. Now I change my mind a little and I think that white shields of nuns = white area of Swallows plus a white area similar to your F2. This white area like your F2 appears to be a stable marker itself.

MICHAEL SPODONI REPLIES: edited

Ok, so that I am clear, you are talking about the saddle on the back of Swallows (shoulders). This is completely different from the White wing shields of the Nun. As you have commented, the white wing shields (I believe some call this Bishop Winged?) is a separate recessive gene as it segregated out in my F2 mating.

Getting the white saddle was the last part to turn white when doing my Nun back crosses. See pictures below with comments.

Is there a genetic symbol for the recessive white side gene? ws I believe is for Whiteside but isn't that a form of grizzle (G) and an allele? [Whitewing ash reds are wwg, not a grizzle. Whiteside Ws (actually e/e, Ws//Ws) recessive reds are not a form of grizzle either. Whiteside Blacks are a form of grizzle (actually S//?, G^ws//?)] For now I will use lower case 'bw' for recessive bishop wing until someone corrects me. ☺

LAUGHABLE NONSENSE:

Seen in a London department store: Bargain Basement – Upstairs.

In an office: After tea break staff should empty the teapot and stand upside down on the draining board.

Would the person who took the step ladder yesterday, please bring it back or further steps will be taken.

Notice is health food shop window: Closed due to illness.

Spotted in a safari park: Elephants please stay in your car.

1338



Andalusian B1 (F1xNun) gazzi,
Just need the white wing shield
& saddle. z//z, +/-bw.



Reduced rec. red B1: is a (F1 BaldxNun) X Nun
or Bh//+, bw//bw, z//? Bald is dominant white
cap & flights but has white wing shield of Nun



Ash red B1 (F1XNun) =//z, bw//bw



Black B1 (F1xNun) z//z, bw//bw. The
Saddle is the last part to show color
Mating 2 of these bred similar with some
only 1 colored shoulder & the odd proper
marked Nun.

EDITOR:

The Nun marking always intrigued me. In the early literature, it was hard to separate the Nun from the Helmet. The Stork and the Nun also have affinities. The modern Helmet differs from the Nun in that it has less head colored, being just a colored cap and white flights. The Stork differs from the Nun basically in that it has a white tail. The Chinese Nasal Crested have a phenotype called 'Two pieces of Steel' which is basically marked like the Helmet.

My tests with the Helmet and the Chinese NC produced birds that had some of the F2s similar to the Black above. The back invariably was marked.

As used in literature, Bishop-wing would not show as on the Andalusian. Bishop wing refers to the whitening of the feathers of the digital area including the thumb or bastard pinions, not the shield area and as such would not be any of the above. If you picture a bird with white flights with the white extending around the edge of the wing to the “shoulder” which is actually the elbow, this is bishop wing. This area is colored in the Nun and thus the opposite of Bishopwing.

MICHAEL:

In crosses of Nun to selfs, all I bred were selfs with white navels. Confirming Nun marking is recessive. Mating F1s together, I bred Gazzi, self with white wing shields [like pic below] [&] Nun marked with partially colored saddle (back) In all cases bibs were not deep and were the hardest to get back, but my Nuns were generally shallow in the bibs anyway.



(Nun x self) F1 X F1 = F2



F1 X Fairy Swallow

FRANK (T.O.M.) WRITES:

At a recent show I attended, I was looking over the O[riental] Frills and spotted some of them with laced frosty coloration markings expressed throughout the breast, neck, and head areas. I was somewhat taken with this expression and was wondering just what genetic factors were responsible for this feature. Can't say I really liked what I saw, but one person told me that this is the Frills that are winning. Any opinions or comments.

BOYAN BOYCHEV WRITES: editing

Frank, I suppose you are talking about Blondinettes aren't you? At first, Oriental Frills are very hard to select race and second the Standard says that frosted heads are not a mistake. Even the Standard does not comment on this subject, because of the rarity of these birds, in most cases the judges have make some compromises. But in your case, the frosted head is not a mistake. The breast and neck we can dispute the matter, but I can't discuss this one without seeing the birds you are talking about. I have attached a picture of winning Black-laced Blondinette from last show in Louisville (owned by Ron Bordy). Is this what you are talking about? The color of this bird is very good (there are also excellent and

1340

super rating). But all this is my opinion as a judge. May be in the USA, there are different points of view.



EDITOR:

The American Standards book does not discuss the frosty head marking but the German Standard even shows a picture of a bird similar to the one above. The stress on color is that each feather on the spread colors is white with colored edging. Although it has not been researched thoroughly; the coloration of the O. Frill is a combination of Toy Stencil complex, Frill stencil, and Sooty. A number also are hetero for Dom. opal but in the adults the Toy Stencil complex covers the Od. Tests produced a variety of edging on the feathers from very finely edged to about 1/8th inch edging. Selection is toward the very fine edging.

MORE NONSENSE TO LIVEN THE DAY?:

Notice in a farmer's field: The farmer allows walkers to cross the field for free, but the bull charges.

On a repair shop door: We can repair anything. (Please knock hard on the door – the bell doesn't work.)

Seen at a conference: For anyone who has children and doesn't know it, there is a day care on the 1st floor.

In a Laundromat: Automatic washing machines: Please remove all your clothes when the light goes out.

In an office: Toilet out of order....please use floor below.

A woman was leaving a convenience store with her morning coffee when she noticed a most unusual funeral procession approaching the nearby cemetery.

A long black hearse was followed by a second long black hearse about 50 feet behind the first one. Behind the second hearse was a woman walking a pit bull dog on a leash. Behind her a short distance, were about 200 women walking in single file.

The woman couldn't contain her curiosity. She approached the woman walking the dog and said, "I'm sorry for your loss. I know now is a bad time but I've never seen a funeral procession like this one. Whose funeral is it?"

The woman replied, "My husband's." "What happened to him?" The woman replied, "My dog attacked and killed him." "Well, who is in the second hearse?" The woman answered, "My mother-in-law. She was trying to help my husband when the dog turned on her."

A poignant and thoughtful moment of silence passed between the two women. "Can I borrow your dog?" She said, "Get in line."

GREGG SALE SENT THESE PICTURES:

They show why the trait was called undergrizzle.



Undergrizzle bronzed sooty. Usually the belly is also gizzled like the underwing. A shot of rec. red should produce a Brander bronze phenotype. In most bird colors the base of the primaries show a whitened coloration.

EDITOR:

Axel Sell sent this summary on almond which should help understand the complications of breeding a 'classical' almond.

GENETICS OF THE ALMOND COLORATION
Dr. AXEL SELL.

One of the greatest challenges in the pigeon fancy is to breed a beautiful coloured almond. Due to the analysis especially of some American Fanciers and scientists today, we are well aware of the genetic basis of the classical Almond colouration and the related Almond-bred colourations. With this information in mind, it is possible to develop some rules for the most promising matings in order to breed the classical Almond.

First of all, we have to realise that we cannot raise Almonds from a mating where both partners involved, do not carry the Almond Factor.

ALMONDS AND DEROY.

The Almond Factor is present in the classical Almond and also in the DeRoy. The DeRoy colouration looks like a dark yellow with a few very dark yellow feathers on head and neck. They are very often confused with agates. For our purpose, however, it is necessary to distinguish between both colourations very careful. Genetically, DeRoy are agates with the Almond trait. The Almond trait is also available at the Almonds Splash, those are Almonds which lack ground colour. Genetically, they are missing one dosis of the trait "recessive red".

KITES AND AGATES.

Kites and Agates are related colourations which do not have the Almond Factor. Nevertheless, they are very important in the breeding programme. Genetically, Kites are dark checkered birds with the trait for Kite-bronze. Kites with a very rich bronze at the breast, flight and in the tail feathers, in addition, are heterozygeous recessive red. Sometimes also the grizzle factor is present. This, however, will show up only in some feathers in the neck or at the head. Agates could be looked upon as Kites which in addition are homozygeous recessive red. Gold Dun are diluted Kites and Yellow Agates are diluted Red Agates. The grizzle factor is sometimes present too, and shows through in some white flecks especially in the wing region. In order not to complicate the presentation in the following, we will not separate intense and dilute Kites and Agates.

BREEDING HINTS.

We should not mate two birds which both carry the Almond trait (Almonds and DeRoy). Already Fulton in the last century did know that some of the progeny of two Almonds will be of white plumage, near or total blind, often "bladder-eyed" and in general, of poor vitality. That does not mean, however, that it would be impossible in principle to breed some classical Almonds from such a mating. Nevertheless, in the following we will first discuss the most promising matings 1 to 6. If not stated otherwise, we will assume that the Almonds involved are classical Almonds

with a fine ground colour, and that the Kites involved, are of very rich bronze, a sign for "one dosis" recessive red.

1. Almond cock x Kite hen.

$\frac{3}{8}$ of the progeny will be Almond, $\frac{1}{8}$ DeRoy, $\frac{3}{8}$ Kites and $\frac{1}{8}$ Agates in both sexes. If the hen is not heterozygous recessive-red, we will get one half Almonds and one half Kites instead. The number of Almonds with a good ground colour, however, might be even smaller.

2. Kite cock x Almond hen.

75% of the young cocks are Almonds, 25% DeRoy. 75% of the young hens are Kites, 25% Agates. Again, if the Kite is not very intensive bronze, we will get instead of the DeRoy, some Almond cocks, instead of the Agates additional Kite hens.

3. Almond cock x Agate hen.

From such a mating we will get 25% Almonds, DeRoy, Kites and Agates each, in both sexes.

4. Agate cock x Almond hen.

One half of the young cocks will be almond, the other part DeRoy. From the hens one half will be Kites, the other Agates.

5. De Roy cock x Kites hen.

We will get 25% Agates, DeRoy, Kites and Agates each, in both sexes.

6. Kite cock x DeRoy hen.

One half of the young cocks are Almonds, the others DeRoy, one half of the young hens are Kites, the other Agates.

Almonds could be raised also from a mating of two Almonds:

7. Almond x Almond.

25% of the progeny will be semi-lethal pure Almonds with white plumage and eye defects (see above), $\frac{3}{8}$ will be Almonds in both sexes, $\frac{1}{8}$ DeRoy in both sexes. $\frac{3}{16}$ are Kite hens and $\frac{1}{16}$ Agate hens.

8 & 9 DeRoy cock x Almond hen and vice versa.

One quarter will be semi-lethal again, one quarter Almond in both sexes, one quarter DeRoy in both sexes, $\frac{1}{8}$ Kite hens and $\frac{1}{8}$ Agate hens.

10 & 11 DeRoy cock x Agate hen and vice versa.

We will not get any Almond, only DeRoy and Agates.

12. DeRoy x DeRoy.

We will not get Almonds again. One quarter will be semi-lethal again, one half will be DeRoy in both sexes, one quarter Agate hens.

In the following, we will give some hints on what will happen when mating Kites and Agates.

13. Kites x Kites.

If both parts are heterozygeous recessive red, we will get 25% Agates and 75% Kites in both sexes, if one or both partners are not, we will only get Kites.

14. Agates x Agates.

We will only raise Agates in both sexes.

15 & 16. Kite cock x Agate hen and vice versa.

If the Kites are of a very rich bronze, (a sign that they are heterozygeous recessive red), we will get one half Kites and one half Agates in both sexes. Otherwise, we will get only Kites in both sexes.

Gold Dun.

Some remarks about the attractive Gold Dun, if such a bird will result from two Kites or from a Kite mated to a Red Agate, she will always prove to be a hen. We then also can be sure that her father is heterozygeous for dilution and he, also in the following (with an intense hen), will produce some diluted daughters. Mated to a diluted hen (yellow agate or gold dun) he will also produce some diluted cocks. A gold Dun hen mated to a Yellow Agate, to her father or another cock heterozygeous for the dilution factor will produce also some Gold Dun cocks.

Two Gold Dun mated together, will produce Gold Dun youngsters in both sexes and sometimes, (if both are heterozygeous recessive red), a quarter of Yellow Agates in both sexes will occur.

Some final more general hints:-

If we have some Almonds with a rather poor ground colour, we should mate them with Agates or with Kites showing a rich bronze. The number of Almonds with the standard colouration then will not be smaller compared with a mating of a classical Almond bird. Kites with slight bronze, should be mated with DeRoy or Almonds with a fine colour. From Almonds with a poor ground colour which are missing the trait for recessive red, we will not get any DeRoy or Agate. Instead of the above mentioned Agates and DeRoy in our examples, we will get additional Kites or Almonds.

Almonds with heavy flecks which are regarded too dark, should be mated to Agates or Kites showing some white. The dilute colourations yellow agate and Gold Dun, should not be used too often in the breeding program, because the combination of the Almond trait and dilution in one bird seems to reduce vitality.

It should be clear that we have to judge the colouration of an Almond against other birds of the same age and sex, because Almonds become darker from year to year, and cocks are always heavier flecked than hens.

The rules outlined above, should be a help to breed more systematically Almonds. The tuning to raise excellent birds, however, will remain in the hands of the fancier. Breeding top birds will furtheron be more an art than science.

EDITOR: (most of you already know this but to reiterate)

The Stipper (St) gene is the basis for what we call Almond, is a sex-linked gene that has proved to be quite unstable. It has mutated repeatedly so that we have a recognized series of colorations including Almond St, Hickory St^H, Qualmond St^Q, Frosty St^{Fr}, Sandy St^{Sa}, Faded St^F, and wildtype +st.

Each of these have characteristics that make us able to categorize them but there are intergrades and genetic conditions that make many of them questionable as to which category they belong to or if they are another mutant St expression.

To make matters worse, since this is a linked gene, it depends upon what base it is linked to and/or what modifier(s) is(are) present in the genome. Females are easier to categorized than males.

For instance, if the St is linked to brown, the females show a brown stippling. If linked to blue; then she shows black stippling. If linked to ash red then she shows red stippling. In hetero males the stippling that shows is just the opposite.

If the St is linked to brown and the male is hetero for blue; then the stippling will be mostly blue/black with some brown stippling. If the St is linked to blue and the male is hetero for blue and brown, the stippling will be brown with some black stippling.

The reason for this is that the St gene blocks the color produced by the gene it is linked to. Also the stippling increases with the age of the bird so that if the St gene is linked to blue, the bird will get more and more blue/black flecks as it ages so that by the time the male gets to be around 10 years old it will be completely blue. The reason for this is that the blocking effect of the gene decreases with age allowing the color to show normally. However, such males will continue to produce St young as long as they are fertile.

A blue bar Almond is quite different in stippling from the checker Almond which may be vastly different from the T-pattern Almond.

Another problem that pops up from time to time is that young may shift phenotypically so that two Faded birds can produce an almond phenotype young. The following list of pictures will show some of this diversity.



Almond blue bar



Almond checker

1346



Three age colors of almond. 3-1-5yrs



Typical tail of old ash het blue Almond



Almond and dilute almond



Typical of Brander base Almond



Fledgling Almonds.



Ash red Almond het blue



Ash red Almond het blue



Spread Almond (old)



Dilute spread Almond



Ash red almond (old hen)



Brown almond hen

1348



Young Almond



Young brown almonds (Some molted tiger grizzles may also look like this.)



Almond sometimes have mosaic spots similar to this one.



This is an Almond blackwing Archangel. The stipples in the breast are dark bronze.

EDITOR:

Keep in mind that St is a gene symbol for Stippler. Almond is a phenotype combination of genes which normally include homo or hetero blue check, homo Kite bronze, hetero rec. red, and hetero St. Combinations of hetero St, het or homo blackwing Archangel bronze, and hetero rec. red as well as het. St, Brander bronze, het. rec red will produce heavily stippled phenotypes but those made with brander bronze will be very dark ground and fewer stipples.

It has become customary to call any St an Almond but very few have the almond base coloration and really ought to be called Stippled.

Also it should be kept in mind that homozygous St birds are normally all white with eye problems including bladder eye and blindness. Under test, it was found that some strains produce white males with slight eye problems.