

The Pigeon Genetics Newsletter, News, Views & Comments.

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(Founded by Dr. Willard .F. Hollander)

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Your emails and chat messages along with Facebook Group posts are revealing more and more cases of phenotypes in your lofts that simply do not conform to the basic genetic rules with which we are all quite familiar.

This Month's Issue deals with some of those oddities that defy 'pigeon holing' , in other words we cannot always figure out just what to call them . We do not mean outright mutations ., but rather birds that look somewhat normal but have slight differences.

The more we experiment with different combinations , the more likely it will be for slightly strange colour characteristics to appear. This is especially so if we are working with known mutations that already have quite a wide range of different effects .

Keep in mind that many of these genetic mutations are slight modifiers of the three base Colour pigments such as those at the dilution locus : Pale , dilute , and Ecu Extreme dilute. Then there is Spread factor that causes the base pigment to be dispersed as a smooth spread pigment granule cover to mask Pattern and other modifiers. Then there is the SOX 10 locus mutant recessive red that covers even spread factor . The list goes on and on and most of us are aware of these and how they inherit and affect overall colour.

However there are some traits that each do very similar things to base pigment and pattern with only slight differences and these are the ones that often cause us to scratch our heads as we wonder what the heck is going on with them!

Let's take a look at some examples that YOU may have come across in your own lofts.



This is an ash-Red hen bred by Adam Archer of Australia, you will see that the tail feathers in particular express what appears to be more than one base pigment . This is not normal for a hen as they have only the one "Z" chromosome and cannot carry a second base pigment allele as they are virtually pure (hemizygous) for their base colour.





The above four photos show us a female Racer that many would just look at and say it's an ash-Red bar. Some may say mealy or strawberry or dapple . Adam has noted that he thinks it is a light expression of Sooty but with some oddities that make her stand out as slightly different. He wrote :

"This hen has always intrigued me. She's sooty ash red bar, but is just "lighter" than you'd expect. She's not dilute, and is from pure racing lines (no colour projects). Any thoughts?"

Editor's reply : My impression is that she is a smoky factor bird quite often mistaken for light Sooty marked birds. I could be wrong on that , but I have seen many similar birds that seem to have 'smudged' Sooty marks . Invariably they too will not have albescent strips on the outer edge of the two outside tail feathers nor on the rump area of the bird.

This hen also has what appears to be several blue/Black or brown coloured feathers which hemizygous (pure ash) hens usually do not express as they do not have a second "Z" chromosome upon which the second colour can be stored.

Another trait that she has is rather silvery neck feather tips, which is not all that unusual for ash-Red series birds , but must have an additional gene trait in order for that to occur.

Below : for comparison, (1) a Cherry (allele of recessive opal blue bar.), (2) a Sooty ash-red Bar , and (3) a typical Ash-Red bar.

(1) Photo provided by Octavian Sarofolean , bred by Voiajori Colorati of Romania .



(2) Stephen Walsh Austrailian Facebook Group



(3) Bob R.

Email from **Hein Van Grouw** --- Hi Bob,

Thanks again for a new Newsletter. I was very pleased to see what Ash Hammet wrote about Extreme Dilute (ED): *'I don't think extreme dilute is an "epistatic" modifier. I think the color expressed is simply so light, the pigments are so diluted, that this makes for a visually very similar coloration regardless of other factors, rather than epistasis.'*

I fully agree, as you know, but could never word it as good as Ash Hammet did.

I do not agree, however, that ED birds have normal coloured eyes. Just after hatching one can hardly distinguish them from Albino but when they get older they do get a bit of melanin in their eyes what gives them a better eyesight than Albinos. However, one can still notice from their movements that their eyesight is not optimal (due to the lack of melanin). The eye colour may look normal, especially as the orange (pteridine) pigment or white (guanidines) pigment is still present in the iris, but most melanin deeper in the eye is absent. By shining a light in the eye one will notice the reddish hue in the pupil. Attached a few pics, including three of the same bird to show that with selection one can achieve a rather warm-coloured ecru colour (ED blue spread).

Also good to see that a bit of attention was paid to Ringneck Doves. Since the mid-1980's up to 2005 I've bred all the mutations available then, and researched their inheritance. I was lucky that in the 1990's many new mutations occurred in Europe. I've corresponded a lot with Wilmer Miller and Willard (Doc) Hollander about these. The Pink Ringneck Dove I've bred in the late 1980's. Attached a photo. Quality is not brilliant as it was in the 'good old days' of colour slides, and this is a digital scan. In Dutch we call this colour combination *Ino Phaeo Egaal*. Ino is white d^w (is the same as ED in pigeons) and Phaeo is Tangerine Ta. Egaal means solid, so not pearled or laced as most homozygous tangerines are.

Regarding the ED pigeon of Adam Archer; it is hard to tell from the photo. No tail bar is visible in the photo what suggests it is an Ash-red. But, if the bird does have a pale tail bar after all (but is not visible in the photo) then it is indeed a blue. The overall colour looks more like a Blue Check (but to get the actual colour of an ED bird captured in a photo is rather difficult I've learned).

I was a bit confused by the information from Adam Archer/Dick Cryberg:

'Extreme dilute is an interesting gene. Today we know of three alleles in the US. The one from Barkel, one discovered by Ann Ellis in her Monks and one that was found in Rollers some 30 years ago. I know for sure all three of these are different mutants, but all three look exactly alike. I also know of one that happened in Europe. That one can be traced back to an ash red hen which hatched in the late 1980s. Her color was normal, but she produced two sons which were hetero for extreme dilute. So, while she carried the mutant on some of the cells in her ovaries she did not carry it in her body cells. So, I have little doubt it would be a different mutant from any of the US versions.'

What does he mean by three alleles: Pale, Dilute and Extreme Dilute? Or three different forms of Extreme Dilute? I guess the latter? If so, I'd like to know how he knows for sure these are different mutants.

And also, although not impossible that a sex-linked mutation comes from a hen who is not showing it, was it not possible that the mutation originated from the sire who was mated with this ash-red hen and produced the sons which were carrying ED?

All the very best for now.







Photo of a lemon /E cru/ Extreme dilute in the foreground , and a pink eyed dilute at the back. Bred by Octavian Sarafolean . He commented : If. he { Hein Van Grouw } said that, { the eyes are pink } he is right, the eye still has a pinkish shade even when they are adults but you can see it only on good light.



Below are some birds posted by **Octavian Sarfolean** in my Facebook Group "Strictly Colour Genetics for Pigeons".



The Intense phase pink eyed dilute Ash-Red bar .

Michael Spadoni of Australia has had a number of birds that express more than one base pigment when normally it would not be expected. Here is what he has to say: Only clue: there is no St involved. (or St alleles) 1 more clue all are Ash red based, First is a cock other 2 are hens. I'm not sure if its Ba//+, or Ba//b but clearly it can't be Ba//+//b. , 1 more tip, it is an Ash red T pattern. The reason I posted this pic is, Ash red is an unstable gene, St is an unstable gene. If I'm seeing the impossible with all 3 base pigments on Ash do we also see it in Stipper birds? I would think we should. Start looking more closely especially at the tails. In my Nuns I have all 3 base pigments and mix them indiscriminately. I don't know if this has a bearing on these unusual multi pigment birds but this is not the only one I have bred, what's even more unique, I have bred Ash hens with Ash base & brown & Black pigment striations.

Editors {Some ideas being kicked around are that perhaps the top cock bird is a Mosaic or St^Qualmond. Michael indicates that neither is the case. The bird is ash - Red T-pattern and otherwise appears quite normal . We have covered this topic previously. Another theory is that basically our eyes are playing tricks on us in that all of the expressed pigment may actually be indeed ash, but expressing in various tones but that is a stretch given that the tail band is not ash.}



{Shadowing of black on an ash-Red bird generally referred to by some as a 'Black Ash.' }



{Below a Nun hen with what appears to be a brown /chocolate tail feather and some scattered head feathers of phaeomelanin as well as a few black feathers..This photo does not show us much , so there is not much we can say about the phenotype. We know that copy number variant (CNV) only applies to Stipper , and it's alleles among the mutations studied at the molecular level so far... so is not a possibility in non-stipper birds. My take on these birds is that a somatic mosaic MAY explain the odd man out feathers of Black pigment. The others may be bronze and/or other modifiers. }



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Ash-Red bar hetero Ts1. , young male hetero for blue /Black but not expressing . The black flecks (Ink spots) normally appear after the first moult and may intensify for several successive moults.



Bob R.

This Ash-Red bar cock is expressing the blue/Black carried on the other chromosome in the form of scattered flecks or Ink spots in the tail feathers and flights. It is common for these flecks to also express on the shield area especially with coarse spread checker, T-checker or spread factor . Photo by **Mick Basset**.



So, while most of the above information is well known and understood by many of our readers , we include another look so that new members may have a chance to study these traits.

We are receiving new applications to receive the Newsletters every week , and that means that there is always a need to repeat items that we have previously covered. There are often updates also, as well as additional photos new to everyone.

That brings us to the end of another Issue and another Month in 2020 . We enjoy hearing from each of you and certainly appreciate the support we have been getting. This is a FREE Newsletter and completely voluntary on our part. We try to offer you as much current information as possible without getting too technical. We depend on you our readers to supply us with photos and ideas so please keep them coming even if not personally asked. We are both very busy so often do not have time to write requests for specific input. If there are topics that you would like to see included , PLEASE do not hesitate to ask! That is it from the Pigeon Loft for September 2020, Everyone keep safe and well!