The Pigeon Genetics Newsletter, News, Views & Comments.

The Pigeon Genetics Newsletter, News, Views & Comments.

(Founded by Dr. Willard .F. Hollander)

Editor **R.J. Rodgers** Nova Scotia Canada.

Co-Editor **Sabbir Hossain(Shoibal)** Dhaka Bangladesh.

July 2025

Our topic this Month is the Part 2 of Hein Van Grouw's Dove Genetics.

There will be more later this year and Next year to cover all aspects for your enjoyment .

~~~~~~

Now I am pleased to present a photo of Dr. Lester .P. Gibson with grand-daughter as he celebrates his 96th. Year ! Paul devoted approximately 31 years of his life to publishing this Newsletter and working closely with Dr. Willard .F. Hollander testing and naming many Genetic Traits in the Pigeon Hobby!

Congratulations Paul! All The Best and Keep smiling , Great to see you!
~~~~~~

The following text has been written from an European perspective and has been published earlier in episodes in the English magazine Cage & Aviary Birds. The text is slightly adapted for this Newsletter, and some additional information has been added. All photos by the author.

I'm keeping Ringneck doves, known as Barbary doves in the UK, for more than 45 years now and have investigated the inheritance of all mutations available to me in those years. My interest in doves is thanks to my first dove, when I was 10, what was, in fact, an Eurasian Collared Dove.

Hein van Grouw, July 2025

DOVE GENETIC, PART 2.

Introduction

Apart from its ancestry—the African Collared Dove—nothing appears to be known of the early history of the domestic Barbary Dove. Despite old common names like *Indian Turtledove* and, for the 'white' colour form, *Java Dove*, it is probable that the first domestication occurred in Egypt. Aldrovandi (1600) mentioned that he kept a pair of Barbary Doves himself which came from Alexandria in Egypt, and he stated that males are fawn-coloured and females white. On this basis, it is clear that he was discussing the only two occurring colour mutations of Barbary Dove at that time. The original dark colour of the ancestral species was not then known in the Barbary Dove. These two mutations are both a form of Ino, a qualitative reduction of melanin in which the quantity of melanin granules in the plumage is unchanged but, due to incomplete melanin synthesis, the pigment granules themselves are lighter in colour, resulting in paler plumage (see for further details the June 2024 Newsletter). For centuries only these two mutations were present in Barbary Dove, and it was only in the second half of the 20th century that suddenly many more have occurred. Currently at least 14 distinct colour mutations are known, giving rise to numerous colour varieties.

***Photo 21 and 22**: Blond (left) and White Barbary Dove, both hens. These were the first mutations, already known in the 16th century, and for many years it seemed that was all the Barbary Dove had to offer.*

THE COLOURFUL HISTORY OF THE BARBARY DOVE

In contrast with domesticated pigeons, little research has been conducted on the inheritance of the different colour mutations in the Barbary dove. In North America it was mainly Dr Wilmer J. Miller and Dr Willard F. Hollander who researched the nature of the nine mutations then available in the US. Thanks to their research and publications between c. 1960 and 2000, the Barbary Dove became more popular among fanciers. Miller especially was a keen promotor of the species. In Europe, however, more mutations are available and from the late 1980s to c. 2006 I have been working to unravel their genetics and to publish my results.

Currently at least 14 distinct colour mutations are known. It is likely that there are more, but it is often difficult to find out where and when certain mutations occurred for the first time. One of the reasons for this is that new colours are often not recognized as such, and no mention is made of them. The naming of the different colour mutations and colour combinations is also inconsistent, with different names being used for the same mutations and similar names used for different mutations! It is therefore often unclear which actual colour is being referred to. A good example is Blond, the oldest mutation in the Barbary dove and already present before 1600. This colour is also often referred to as Pastel, Fawn, Yellow and even Wild Colour. Here I shall use the names most commonly used in Europe with, if differently, the American name according to the standard of the American Dove Association, between brackets.

As Blond (called Fawn in America) was for several hundred years the main colour in Barbary doves, it was considered by some to be the 'wild colour'. Many of the new mutations occurred first as a combination with Blond. For several hundred years it seemed that that was all the Barbary dove had to offer in the way of colour mutations, but nothing could have been further from the truth.

The first true Albino was reported from Japan by M. Tang in 1930, and in 1967 Miller and Hollander imported three pairs of these albinos into

Photo 23: *Albino (and silkie) Barbary dove, cock, bred by me in 1990. This dove appeared to be the first Albino in Europe and hatched from two wild-coloured parents. Was it a spontaneously re-occurring mutation, or did it originate from the original Japanese stock and had it reached the Netherlands via the doves imported from America in the early 1980s?*

the US. Any current albino Barbary Dove in the US comes from these Japanese doves. In 1990 in the Netherlands, I unexpectedly bred an albino from two wild-coloured parents. The mutation may have been present in the genome of some of the American doves which were imported in the early 1980s, and in that way introduced into Europe. Whether any other albinos were hatched prior to 1990 is unknow. An Albino has rather poor eyesight and breeders may have dispatched them mistaking them for 'normal' white birds with an eye problem. Any albinos still present in Europe originate from this 1990 hatched bird, a cock.

In 1951 Miller discovered among a consignment of Barbary doves from a dealer in California, the first Silkie. This bird, a Blond cock, is the 'founding father' of all silkie Barbary doves currently present.

***Photo 24**: Blond-phaeo (Orange) silkie Barbary dove, cock. All silkie Barbary doves are descendants of the Blond silkie male discovered in California by Wilmer J. Miller in 1951.*

Also in the 1950s the first Isabella mutation was discovered in Ohio. This trait first occurred in combination with Blond and was called Peach in America and Blond-isabel in Europe. After 'removing' the Blond mutation by crossing in wild-coloured stock, the Isabel mutation was then also bred in its basic form, called Rosy in America but simply Isabel in Europe.

***Photo 25**: Blond-isabel (Peach) Barbary dove, hen. The mutation Isabella occurred first in the 1950s in Ohio, America and was in combination with Blond. In the early 1980s the mutation was imported from Amerika to the Netherlands.*

Pied mutations have occurred several times in the 20th century, recorded by Finn in 1902, in 1947 by O. Riddle, then 10 years later, in 1957, appearing almost simultaneously in Phoenix, Arizona and Baldwin Park, California. The current pied doves are all descendants of the 1957 birds.

***Photo 26**: Wild-coloured pied Barbary dove, hen.*

The mutation White-head (called Ivory in the US) in Europe probably originates from Italy as it was the Italian geneticist Dr. Taibel who reported it first in 1966. Shortly after that the mutation occurred independently in Rayne, Louisiana. A similar trait, much lighter in colour but with a darker, nearly black, neck-ring and tail markings, is likely to have also occurred in Italy. This latter mutation is known as Ivory in Europe. In the September 1997 Newsletter, I introduced it as *White black-collared*, to avoid confusion with the American name 'Ivory' for White-head. This lighter mutation, as far as I know, does not appear to be present in the US. The date of first occurrence is unknown, but in the late 1980s these became available in the Netherlands from Italy.

***Photo 27 (left):** White-head Barbary dove, hen. The mutation independently occurred both in Europe and the US in the 1960s. Why the mutation in the US was called Ivory is an enigma, as its colour does not even resemble closely the colour of ivory.* ***Photo 28 (right):** The lighter-coloured mutation, called Ivory in Europe, does have the colour of ivory.*

White-head and Ivory are related in the way that they are different mutations of the same gene. In genetical terms this is called allelic; the mutations are each other's alleles. A third allele occurred in my own stock in 1998 from a pair of Blond Crested Barbary doves I had received from Kuwait the year before. The mutation was unknown to the Kuwait breeder, so I assume it was a new mutation. I called it Pale-head, as it is overall darker than White-head and with a pale (though not white) head and breast.

Photo 29 and 30: *Blond Pale-head Barbary dove, hen. This dove hatched from two Blond and crested parents in 1998, and was the first Pale-head mutant. As the mutation influences the melanin synthesis, just as in, for example, Brown, Ino and Albino, the pigments in the eyes are also affected and therefore the eyes are reddish. The crest in Barbary doves is the same as in domesticated pigeons, and formed by a stripe of feathers on the back of the head which are implanted in the opposite direction.*

The Phaeo-mutation (Tangerine) probably has its roots in former Czechoslovakia where in the 1970s it was discovered by the German fancier A. Münst. This mutation also first occurred in combination with Blond and Münst named the resulting colour 'Orange'. In 1981 'Orange' doves were imported into the US where, after introducing the wild-colour, the Phaeo-mutation became available in its original form.

Photo 31: *Blond heterozygous Phaeo, hen. This is how the Phaeo (Tangerine) mutation first occurred and what the German fancier A. Münst called 'Orange'.*

Also from Eastern Europe, and probably at around the same time, originated a different pied mutation, given the meaningless name 'Californian' by Münst. This mutation is not present in America and is very rare in Europe. Sadly, Californian was crossed in ignorance with normal Pied resulting in pied doves carrying both genes.

The mutation known as Frosty was first discovered in 1988 in Kansas. It was likely to have been absent in Europe until around 2005 when several birds appearing to be Frosty were received from the Czech Republic by a Belgian dealer. Whether these Czech doves had an American ancestry, or that the Frosty mutation had independently also occurred in Europe is unknown. Among these Czech doves were also some with a crest. Previously, in 1997 I had imported the first crested Barbary doves into Europe from Kuwait. Whether the Czech doves were related to these (the Kuwait breeder had not exported any others to Europe) or derived from a recurring crest mutation in Eastern Europe is equally unknown. The crested doves in America are from the Kuwait stock and these, according to the Kuwait breeder, originated from the Philippines. Another form of crest, known as Tufted or Nasal Tufted, was first found in America in the 1990s, I believe. It is only occasionally seen in Europe, seemingly unrelated to the American mutation. In 2006 I bred a dove with a small nasal tuft from two normal parents, but did not breed further with this bird.

Photo 32: *Crested and presumably Frosty Barbary dove, cock. This dove came the Czech Republic.*

In 2007 I bred a Barbary dove with three extra tail feathers, so 15 instead of the normal 12. Both parents had the normal number of tail feathers, and whether the larger number of tail feathers was heritable is unknown, as I have not undertaken further breeding tests with this 'Fantail Barbary dove'.

Photo 33: *Blond heterozygous Phaeo, hen, with a minimal nasal tuft. She hatched from two normal parents in 2006. Whether the tuft was heritable is unknown as I have not undertaken further breeding experiments with this dove.*

Photo 34and 35: *Blond homozygous Phaeo (Tangerine pearled), hen, with an extra three central tail feathers.*

Any mutation other than colour mutations what are found in domesticated pigeons, can sooner or later also be expected in the Barbary dove. The above-mentioned examples like silkie, crests and extra tail feathers prove this point. Feathered feet and a jabot (breast frill) may be next mutations. Whether these would be all desirable is a matter of opinion. My opinion is that, apart from the colour, a Barbary dove should look like a Barbary dove, and any mutation altering the shape of its outline should not be encouraged. Silkie plumage, in my opinion, does not alter the shape, but a crest, tuft or frill does. And that are mutations altering the feather structure, or feather implantation only. What about mutations altering actual body parts? A short beak, for example (going together with slightly shortened limbs). That this is no fiction is shown by a breeding pair of 'normal' Barbary doves from a Breeder in Suffolk, England. Since 2022 this pair has produced several short-beaked youngsters.

Photo 36 (left): *Three heterozygous Phaeo (Tangerine) Barbary dove youngsters. Two short-beaked siblings compared with, in the middle, a normal-beaked dove.* ***Photo 37 (right):*** *one of these two short-beaked doves as an adult. The leg and wing bones are also slightly shortened as a result of this mutation.*

Back to colour mutations now. In 1995 I received two more new mutations from Italy, Grey and Colour-head, which appeared to have first occurred in that country a few years earlier. Grey became a popular mutation and is now widely available in Europe, but Colour-head is still rare.

Photo 38 (left): *Grey Barbary dove, cock.* ***Photo 39 (right):*** *Colour head Barbary dove, hen. Both mutations appear to originate from Italy.*

In 1996 I purchased an odd-coloured Phaeo Barbary Dove I noticed in a pet shop. After some breeding experiments it turned out this dove was carrying yet another new mutation which I named Grizzle.

Photo 40 (left): *Phaeo-grizzle Barbary dove, cock. I discovered this dove in a pet shop and noticed that the feathers showed an unusual amount of white for Phaeo. It turned out that this dove was carrying another mutation; Grizzle.*

So far, the above-mentioned colour mutations are all more or less established in the Barbary Dove and still more can be expected in the future. Remarkably the mutation Brown—called Cinnamon or Fawn in many other bird species—which is among the most commonly-occurring colour aberrations in birds, has so far not been reported in the Barbary Dove. Very rarely it is seen in the Eurasian Collared dove (this should not be confused with Blond, which is regularly found in this species).

Before the different mutations will be discussed separately in more detail, first a brief introduction to the ancestral, or wild-colour of the Barbary Dove.

WILD-COLOUR

Over the centuries, during domestication, the original dark colour of the ancestral African collared dove had been lost in the Barbary Dove. This colour, know as the wild-colour, is what in genetics is known as *Wild Type*, and that represents the most common or normal phenotype found in a natural population of organisms. Wild Type serves as a reference point for comparing other phenotype variations caused by heritable mutations. In the second half of the 20th century, wild-coloured Barbary doves started to occur both in Europe and the US. However, when, and how the wild-colour got re-introduced in the domestic Barbary Dove in America remains unclear.

Photo 41: *Wild colour has been absent in the domesticated Barbary Dove for many centuries.*

Wilmer J. Miller wrote in the American Dove Association Newsletter (ADAN) Jan-Feb 1989 "*The Dark color we have now is from an importation by J. W. Steinbeck near Walnut Grove, California, in the early 1950's. Steinbeck imported "red-eyed" doves from Holland. He sent them to the University of Wisconsin at Madison for sexing. I was the one who sexed them. They were all females, so I had no chance to hear the different voice they are reported to have, assuming that they are* S. decaocto *that were spreading through Europe at that time. I got "hybrids" of them with ringnecks before returning them. So presumably all our dark ringnecks are from that source. I still have not heard the "different voice."* S. decaocto *had no blood type or other differences noted in comparison with* S. risoria *other than the color. I probably missed noting the undertail coverts and dark outer web of the outer rectrices (tail) feathers that are described by P. William Smith in his recent paper "the Eurasian collared-dove arrives in the Americas," 1987 American Birds 41: 1370-1379.*"

In 1993, however, Miller and Hollander wrote in a German article (*Kurze Geschichte der Farbschlage bei Lachtauben*, in Geflügel-Börse (13): p.10-13., the English translation *Short history of color types in ringneck doves* being published in 1999 in DoveLine, the ADA's newsletter) that they had imported some wild African collared doves from Egypt to introduce the genuine wild-type back into the Barbary dove in the US. This latter statement was probably based on Burger and Hollander who earlier stated in the American Pigeon Journal (July 1971: p. 348) that back-crossing to imported wild African Collared doves in the late 1960s had resulted in the wild-colour being available in the domesticated Barbary dove. So, whether the wild-colour in the US was indeed retrieved from the wild ancestor or was introduced by outcrossing with Eurasian collared dove, or perhaps a bit of both, is unknown.

In the early 1980s several imports of Barbary doves in ‘new’ mutations (e.g. Isabella, Pied and Silkie) from the US were received in the Netherlands, and possibly also in other European countries. Some of these American doves had the ‘wild-colour’—possibly from mixed sources—in their genome and introduced the dark colour of the ancestral species back in the European Barbary Dove population. However, with the natural arrival of the Eurasian collared dove since the 1950s into Western Europe, breeders had already crossed these with their Barbary doves thereby introducing wild-colour into their stock by another means. Many European Barbary Doves nowadays still show some features of Eurasian Collared Dove, e.g. size, especially tail length, but also in colour (see also photo 8, 9, and 10 in the June 2024 Newsletter).

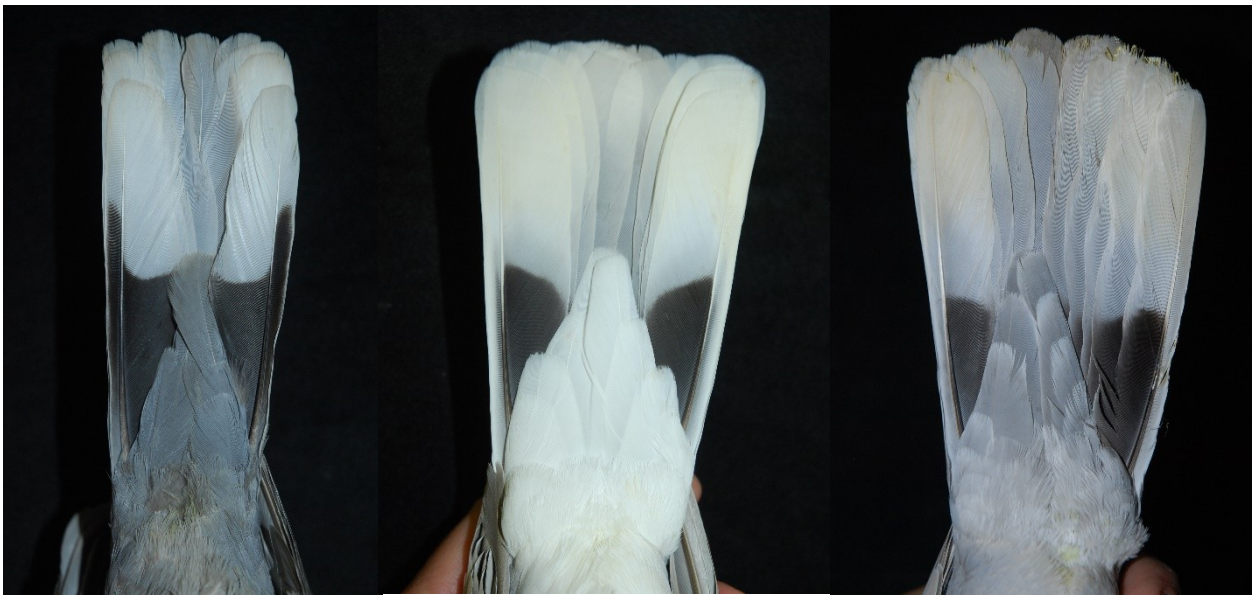

Photo 42: *Under-tails of Eurasian collared dove (left), Blond Barbary dove (middle), and Blond Barbary dove with Eurasian collared dove characteristics (right, see also photo 43 for same individual). This is not an F1 hybrid but a dove with a re-occurring trait.*

Photo 43: *Blond Barbary dove, cock, from parents who did not show any Eurasian collared dove features.*

Two pigments are responsible for the Barbary dove's wild-coloured plumage; eumelanin and phaeomelanin. Eumelanin is responsible for pitch black to pale grey, depending on how the black eumelanin pigment granules are distributed in the feathers. Phaeomelanin is reddish-brown, but also responsible for the pinkish head and breast colour of the Barbary dove. In combination with eumelanin, phaeomelanin is responsible for different shades of brown and pinkish. Most of the plumage of a wild-colour Barbary dove contains both pigments, e.g. head, breast, wing coverts, back, rump and central tail feathers. In these parts the granules are arranged in a clumped fashion and, due to the way the light is reflected, what we see appears bluish-grey. In combination with phaeomelanin it shows as the warm greyish-brown colour of the wings, back and rump. Where the phaeomelanin is absent, in the greater coverts at the wing's edges and the base of the smaller primaries, the bluish-grey colour of the eumelanin only is to be seen.

In parts of the plumage the colour is black(ish), the eumelanin granules are arranged in an equally spread fashion. There is a slight difference in arrangement between the black neck-ring and tail marking compared with the greyish-black primaries. The arrangement in the neck-ring and tail can be described as *coarse spread*, and in the primaries as *smooth spread*. It was 'Doc' Willard F. Hollander who first described this pigment arrangement in domesticated pigeons to help us understand how certain mutations do affect one pigmentation area, and not the other. In Barbary doves also mutations occur what affect the different pigmentation areas in a different way.

Photo 44 (above): *Wing of a wild-colour Barbary dove. In most part of the wing the eumelanin is arranged in a clumped fashion, showing as bluish-grey. In combination with phaeomelanin, the colour becomes greyish-brown. The greyish-black primaries are the result of the eumelanin being arranged in a smooth spread fashion.*

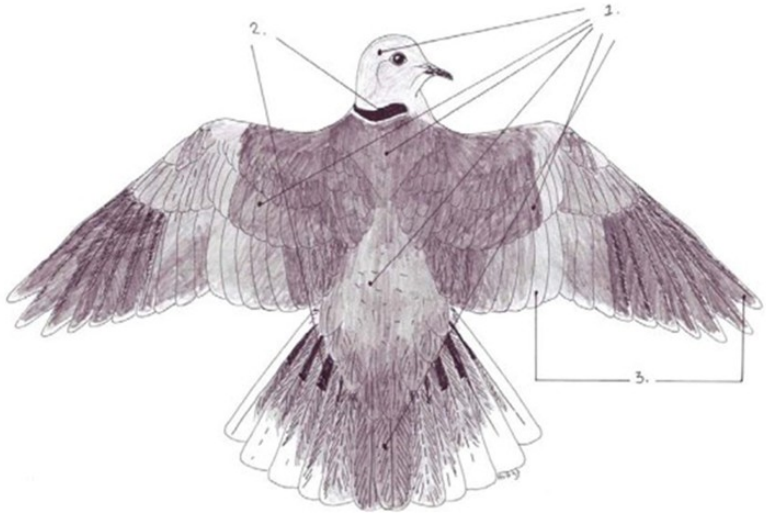

Photo 45 (left): *Three different pigmentation areas in the Barbary dove.* ***1****: clumped spreading of eumelanin, in combination with phaeomelanin.* ***2****: coarse spread of eumelanin.* ***3****: smooth spread of eumelanin.*

To be continued.