

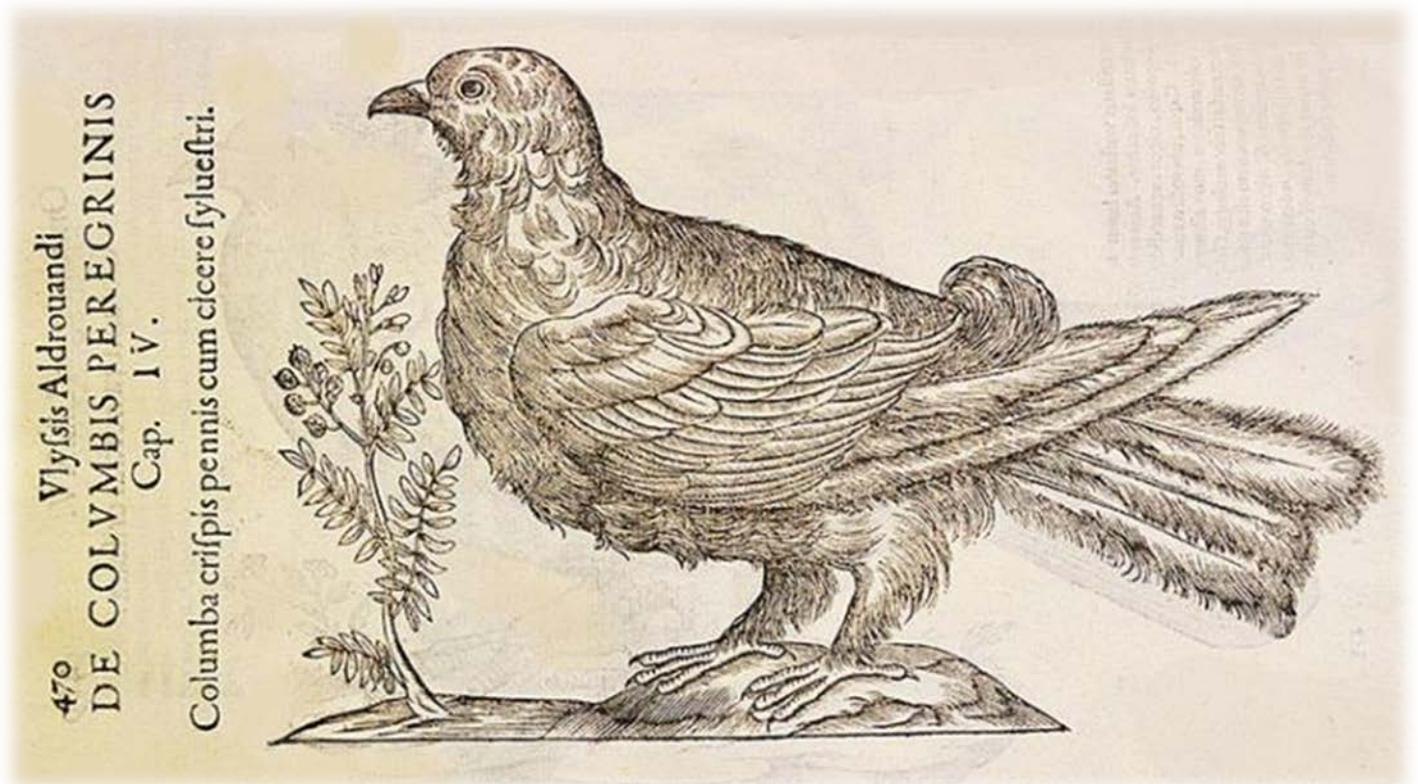
# Silky Pigeons

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Silky plumage in pigeons; some people love it while others detest it. Whatever you think about it, the fact is that this feather mutation has survived for ages in the pigeon fancy and is recognised as a permitted feather variety in the Fantail in most countries. Unknown, unloved! So therefore I would like to provide some history and background information about silky pigeons to show that this mutation is worth keeping.

## The first records

The silky condition, also referred to by Fantail breeders as "lace", has existed for centuries and many authors, both scientists and pigeon keepers, have discussed it in the past. One of the first was Aldrovandi and in his **Ornithologia** (1599) he described the 'Silky hair pigeon' as being of unusual appearance and, according to him, these pigeons came from the Netherlands. He called them *Columba pennis crispis* (from the Latin word *pennatus* = feathered and *crispus* = curled). Because of that name some later authors thought Aldrovandi meant the Frillback pigeon but the picture clearly shows a pigeon with silky feathers. The Silky pigeons Aldrovandi knew were normal shaped pigeons, and they only occurred in white.



Above: Silky feathered pigeon, *Columba pennis crispis*, in Aldrovandi.  
Photo: Hein van Grouw, NHM Tring.



**Left:**  
**Silky feathered pigeon, in German Krause Taube, Figure 4.160 in the works of Marcus zum Lamm.**  
**Photo: Hein van Grouw.**

This was, however, probably not the first mention of a silky pigeon as a description can be found in the works of Marcus zum Lamm (1544-1606). The precise date of the illustration is unknown, and so is the artist, but the pigeon pictured is unmistakably a silky-feathered bird.

Linnaeus also described and named the Silky pigeon in the 10<sup>th</sup> edition of his **Systema Naturea** (1758). He called it *Columba hispida* (from the Latin word *hispidus* = rough, hairy). Just like the ones Aldrovandi described, Linnaeus' birds were normal shaped pigeons with silky feathers. He thought they came from Africa.

In impersonation of Aldrovandi, Brisson (1760) also mentioned the Silky pigeon and he called it *Columba crispa*. In the 12<sup>th</sup> edition of Linnaeus' **Systema Naturea** (1766) the Silky pigeon is still called *Columba hispida*, although he now referred to Aldrovandi's *crispis* as being the same 'species'. Linnaeus now thought *hispida* came from India.

Most of the above authors described 'the pigeon with the hairy feathers' as being an original form (species). It is obvious that they didn't know these pigeons were varieties, as mutations, inheritance and genetics were unknown phenomena in those days.

Among pigeon breeders, however, pigeons with silky plumage were considered to be a distinct breed and were known as 'Lace Pigeons'. Although Spruijt (1931) let us believe differently, the first mention of silky-feathered pigeons is, remarkably, not found in John Moore's **Columbarium** (1735). Moore described the Friesland Runt, a white pigeon and "its feathers stands all reverted", which was clearly an early Frillback, and Spruijt assumed Moore meant a silky pigeon.

**Right:**  
**Lace Pigeon in A Treatise on Domestic Pigeons, 1765. Photo: Hein van Grouw.**

It is the book **A treatise on Domestic Pigeons** (1765), by an anonymous author, in which the 'Lace Pigeon' was described and portrayed as a breed for the first time. The picture shows a white silky pigeon, normal-shaped in type with a crest. According to the author this breed originates from the Netherlands "where I am informed there are great numbers of them; ...their colour is white, and they are valued on account of their scarcity,



and the peculiarity of their feathers..." The Lace Pigeon is not mentioned by Fulton (*Illustrated book of Pigeons*, 1876), but Tegetmeier (*Pigeons: their structure, varieties, habits and management*, 1868) wrote about them without, however, adding anything new though.



*Left:*

*Wing of a normal feathered pigeon.  
Photo: Hein van Grouw.*



*Left:*

*Wing of a heterozygous silky Pigeon.  
Photo: Hein van Grouw.*



*Left:*

*Wing of a h and a homozygous silky Pigeon.  
Photo: Hein van Grouw.*

Charles Darwin (**The variation of animals and plants under domestication**, 1868), who was well acquainted with Tegetmeier was therefore also familiar with silky plumage in pigeons, and he too knew it was a variety although he didn't know anything about the inheritance of this character.

Prütz and Neumeister in **Das Ganze der Taubenzucht** (1876), also mentioned the Lace Pigeon (Seidenhaartaube) and also repeated what was written in 1765 without adding new information.

Lyell, in his book **Fancy Pigeons** (1887), described the Lace Pigeon in chapter 12 'Pigeons of peculiar Feathering'. He clearly understood something about inheritable mutations as he stated "The Frizzled, Frillback, and Lace Pigeons, are examples of natural sports perfected by selection. If lost, breeders could not recover them, but would have to wait till Nature provided them with a new beginning on which to work. If fancy pigeons were separate creations [he meant species], and not descended from a common origin, I wonder how the Lace Pigeon existed till taken in charge by pigeon fanciers".

**Right:**

***Tail feather of a heterozygous silky pigeon (cross Frillback/Fantail).***

***The barbules do not interlock properly and therefore the barbs do not form a solid fane and look like hairs.***

***Photo: Hein van Grouw.***

### **The inheritance**

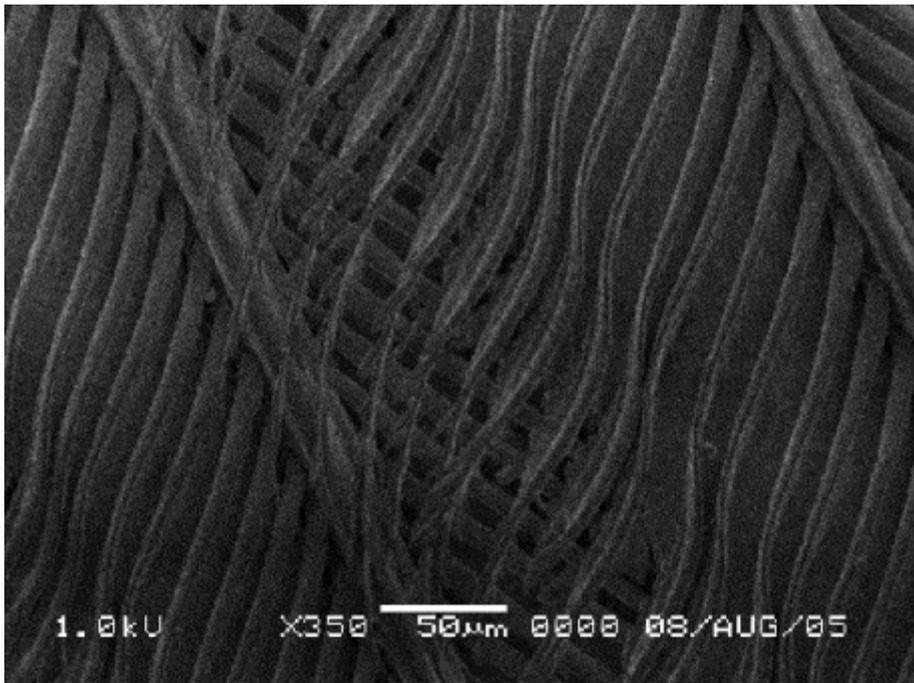
D.G. Steele did the first attempt to unravel the inheritance of silky plumage in the pigeon (1925). He made a study of breeding records obtained from a breeder of white silky Fantails, in Toledo, Ohio. According to

these records silkiness seemed to be sex-linked and recessive to normal and he proposed the symbol I (for lace). Steele himself made no breeding tests, what turned out to be a mistake. Later breeding tests started in 1927 by Cole and Hollander, at the University of Wisconsin, disagreed; the character was neither sex-linked nor recessive. Cole and Hollander's data, presented in 1939 in the *Journal of Heredity*, showed that silky plumage depends upon a single factor, dominant to normal, and not sex-linked. The symbol I proposed by Steele was altered to L.



In Silky pigeons two types of silkiness can be distinguished. The moderate grade is the heterozygous form (L/I<sup>+</sup>), and this is the required form of silky. The homozygote (L/L) birds, often referred to as extreme or double silky, is not required as their plumage is of very poor quality and from the point of view of animal welfare one should avoid breeding them. Moderate silkies (L/I<sup>+</sup>) in crosses with normals (I<sup>+</sup>/I<sup>+</sup>) give both moderate silky and normal offspring (ratio 1:1). In matings of moderate silkies together both normal (I<sup>+</sup>/I<sup>+</sup>), moderate silkies (L/I<sup>+</sup>) and extreme silkies (L/L) will be obtained (ratio 1:2:1). So the silkies of the extreme type appear only among offspring of moderate silky together and, as said above, this should be avoided.

Extreme silky mated with normal results in moderate silky offspring only.



**Left:**

***View through a microscope (magnification 350) of two barbs and their barbules a normal feather.***

**Below:**

***A heterozygous silky feather. The barbules and hooks in the normal feather are normal shaped and do interlock with the adjacent barb, while in the silky feather the barbules are brittle and damaged and therefore do not interlock properly:***

***Photos: Hein van Grouw.***

### **Structure of silky feathers**

A normal feather has two vanes on both sides of its rachis; the inner web and the outer web. These vanes or webs are the results of barbs, which are hooked (webbed) together by barbules and their hooklets.

It is readily apparent that silky feathers fail to web normally, resulting in a 'hairy' appearance (the 'hairs' are the barbs which do not interlock).

The trait seems to be the same as silkiness in Silky Fowl, but a study of the structural basis of the pigeon feathers shows differently. Unlike the condition in Silky Fowl, the barbules of the pigeon feather do not lack the feather hooks. General weakness, fragility, and frequent disarray of the barbules and a tendency of the barbs to twist are the definite abnormalities, and these are, obviously, even stronger in the extreme silky.

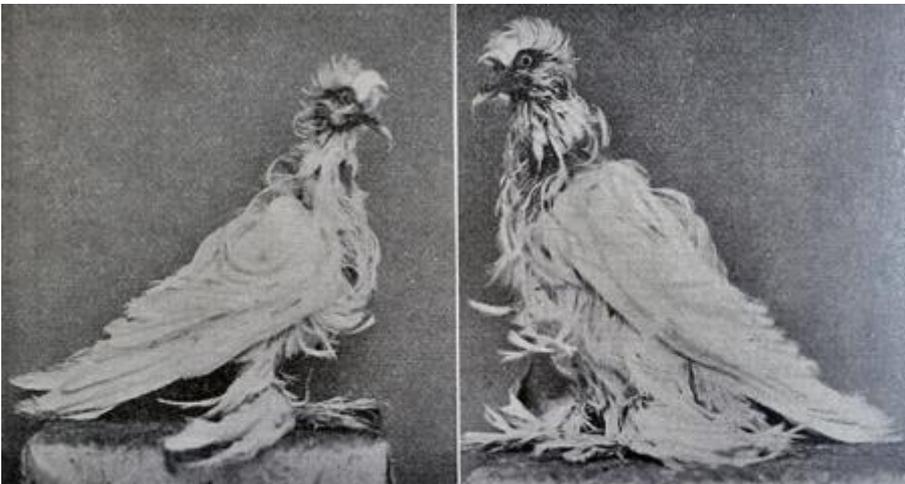


**Right:**  
*Silky, in these case the moderate form, in the Ringneck dove is the same mutation as in the Domesticated pigeon. Photo: Hein van Grouw.*



Silky pigeons cannot fly because of their feather condition, although a moderate silky can reach perches or nest boxes of a few feet high. Their plumage does not cause any insulation problems and silky pigeons are not more sensitive to low temperatures than normal feathered birds. However, their feathers become easily soaked and for that reason they should not be kept in an unsheltered aviary.

Silky squabs may often be recognized before the feathers emerge, as the nestling down tends to curl. Here again the extreme silkies show more obvious the effect of the gene. Moderate silky feathers are soft and flexible and the rachis is normal shaped. The feathers of an extreme silky pigeon feel rough and are brittle, and the rachis is not straight but curved downwards.



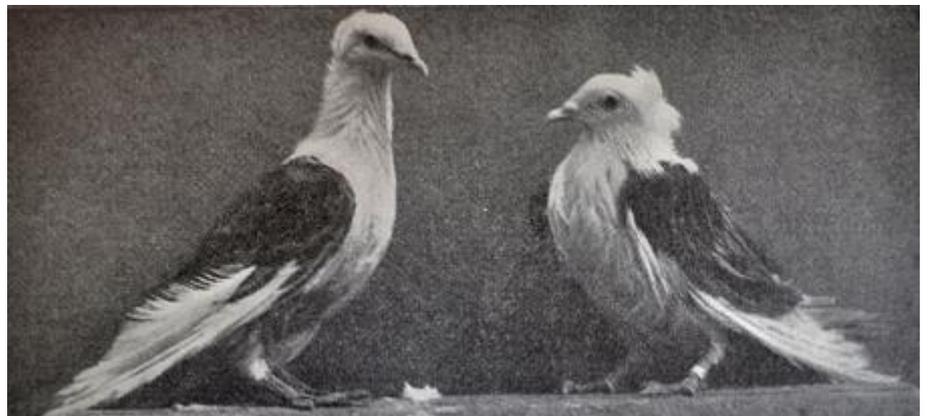
**Left:**  
*Old-Dutch Tumblers in Spruijt. The aberrant plumage of these birds is not silky.*

#### **Different mutations with a comparable effect**

The same silky mutation also occurs in the Ring-neck Dove, and in this species the trait appears to be more popular among fanciers. From time to time, however, fancy pigeons

with aberrant feathers looking like silky do appear. Spruijt, for example mentioned in his book about the Structure Pigeons (1931) that he himself in 1927 bred two 'silky-feathered' Old-Dutch Tumblers from a pair of normal-feathered birds. However, looking at the provided photos, the feather-aberration is clearly not silky. He also mentioned, and pictured, silky Shield Pigeons which spontaneously occurred in a stud of birds in Germany.

**Right:**  
*Shield Pigeons in Spruijt. The aberrant plumage of these birds is not silky.*



These birds too are not silky and their feather aberration is a different mutation.

Any aberration/mutation affecting the feather hooks and/or barbules will result in non-webbing feathers and therefore resemble silky. Most of these mutations, however, affect the pigeons more negatively than silky and their inheritance is often different too.



**Left and below:**  
**Vienna Highflyer with a heritable feather aberration which is not silky. Photos: Berthold Traxler.**  
**Photos: Berthold Traxler.**



A couple of years ago a silky-like mutation was recorded in Austria in a stud of Vienna Highflyers. The inheritance of this mutation is recessive, and the plumage aberration goes together with a nerve disorder (personal communication with Berthold Traxler) resulting in a constant 'shivering' and 'shaking', especially when the birds are stressed. The barbs look 'thinner' than the barbs of silky feathers as it appears that the barbules and their hooks are almost completely absent. Whether this mutation still exists is unknown.

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**Right and below:**  
**Jacobin with a heritable feather aberration which is not silky.**  
**Photos: Hein van Grouw.**



A mutation which was very much like silky occurred for the first time about 20 years ago in a stud of Jacobins in Belgium. The feathers were soft and flexible but seemed to web a bit more than in silky. So now and then, over the years, another one turned up but the breeder always excluded these birds from his breeding program. Information given to me by the breeder and some breeding experiments I did with birds kindly donated to me, suggested a recessive inheritance. Currently the mutation does not seem to exist anymore.



*Left and below: Gelderland Slenk with a, probably, heritable feather aberration which is not silky. Photos: Dick Hamer (left) and Hein van Grouw (right).*



About 8 years ago, in the Netherlands, Dick Hamer bred a silky-like Gelderland Slenk from a pair of normal feathered birds. The bird's plumage was 'hard' and brittle. Unfortunately the bird, a hen, died before breeding tests were finished so the inheritance is unknown.

*Right: Pair of Lace pigeons (in Dutch Zijdehaarduiven) in Spruijt. Spruijt knew them only in their homozygous form.*



### Breeds

In the past a normal shaped pigeons with silky plumage were recognized as being a proper breed and were known as the Lace Pigeon, Hair pigeon or Silky hair pigeon. They came in white only and occurred mainly in the Netherlands around 1900. This breed is now considered to be extinct. Based on the description and photos in Spruijt (1931), the Lace Pigeon (Zijdehaar duif) then occurred only in homozygous form (extreme silky).



*Left: A second generation Frillback cross with heterozygous silky plumage. In non-silky plumage a second generation Frillback cross would show a moderate development of curly feathers. It appears that due to the structure of silky feathers the mutation for curly feathers cannot be expressed. Photo: Hein van Grouw.*

Spruijt also wrote that the Lace pigeon was often crossed with white Frillbacks resulting in white, silky-feathered pigeons with curly wings. By experience we know that this cannot be true. The curls, twists and waves in the feathers of a Frillback express only by the grace of tightly locked feather barbs and barbules.

**Right:**  
**Silky (Lace) Fantail in Fulton, 1876.**  
**Photo: Hein van Grouw.**



As in silky feathers the barbs and barbules do not interlock properly, the expression of the genes responsible for the shape of the feathers in a Frillback will not show in silky feathers. Perhaps the downwards bending feather rachis' of the extreme silkies may have confused Spruijt. Also, the white plumage in the Lace Pigeon was genetically different from white in the Frillback, and crossed together the offspring will not be white.



**Left:**  
**Heterozygous silky Fantail bred by the author. Photo: Hein van Grouw.**

**Right:**  
**Heterozygous silky Fantail cock of Russian origin, which was received by the author in 2001. This bird is the founder of all current silky pigeons of the author.**  
**Photo: Hein van Grouw.**



**Below:**  
**Silky crossbred in an attempt to recreate the Lace Pigeon. Photo: Hein van Grouw.**





*Above: Romanian Naked-neck Tumblers in heterozygous silky (left) and homozygous silky (right). The Russian Fantail was the founder of this variety in the naked-neck Tumbler. Photos: Hein van Grouw*

*Left: First acceptable result of the 'modern' Lace Pigeon bred by the author, based on the oldest pictures available (in Aldrovandi and zum Lamm); a smooth headed, silky pigeon with feathery feet. Photo: Hein van Grouw.*

Nowadays the Fantail is the only breed in which the silky variety has attained sufficient popularity to become an accepted and recognised variety, although they are very rare. The first mentioning of silky (lace) Fantails can be found in Tegetmeier (1868) in which he quotes Mr. Brent: "... and I have read that in both France and Holland Fantails are to be met with, with this beautiful lace or silky plumage". The first

picture of a Silky Fantail was published by Fulton (1876)

One of the reasons silky is not common in the pigeon fancy is because silky birds can not fly. Also silky might be vexing to some fanciers because the desired moderate feather texture does not breed true and the homozygotes ('extremes') are too ragged to show. On the other hand, the dominant inheritance of moderate silky can just as well be considered advantageous, as a single specimen crossed with a normal feathered bird can produce many more without any inbreeding and without the unwanted homozygous silkie birds. For that reason it is rather easy to introduce the silky trait from one breed to another to create this feather variety in any other breed and silky Romanian Naked-Neck tumblers, for example, have seen the light already. And is it perhaps also a challenge to recreate the former Lace pigeon, *Columba pennis crispis* again?

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