

New Dominant Silver Mutation of Europe

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A tremendous breakthrough has finally occurred in the realm of cockatiel color genetics. Until recently, the only recognized color mutations to occur in cockatiels have been either sex-linked (Lutinos, Pearls or Cinnamons) or recessive mutations (Pied, Fallow, Recessive Silver, or White-face). The wild-type Normal Grey has always been dominant to both the sex-linked and recessive varieties, and any of their combined combinations. Now, however, a new development has given birth to the first *dominant* mutation, aptly named the Dominant Silver.

The Dominant Silver first appeared in the United Kingdom, bred in the aviaries of Mr. Terry Cole. By 1988, Cole established the strain and bred the Dominant Silvers in with many of the existing color varieties to form several new cross-mutations. However, this was not only a "first" for a new variety of cockatiel, and a new mode of inheritance, but it was a "first" for the United Kingdom as a producer of a new cockatiel mutation to date.

According to Cole's description, the color of a Dominant Silver is a pastel-silver shade of grey, with the color being somewhat darker in the area of the head and neck, creating the appearance of a "skullcap." He feels the yellow pigment is not affected, although it appears that perhaps the yellow as well as the orange cheek patches are brighter. I would speculate that this could be due to the modification of the grey pigment, allowing the yellow and orange lipochromes to be more easily seen.

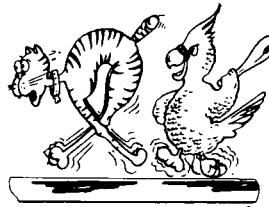
It is always easy to tell if one has a

true Dominant Silver in that the eyes are always *black* and the legs are *dark grey*. In contrast, the Recessive Silver is primarily a red-eyed mutation, where a modification of the melanin pigment occurs to produce a steel, or silvery-grey, to a fawnish-brown tone. Individuals may vary quite a bit in color and while many Recessive Silvers have red eyes, others can acquire melanin pigment and so the eyes may, in fact, appear more brown.

It is interesting to note that apparently when chicks hatch, there

appears to be no difference between Dominant Silvers and Normals, with both having the usual yellow down feathers. However, as pin feathers erupt and they begin to color up, the differences become quite noticeable. The Dominant Silvers can be identified in the nest from their Normal Grey siblings by a light grey, brownish-brick color, along with the darker grey cap of the head, dark legs and black eyes.

After the first juvenile molt, the cocks experience quite a spectacular transformation and acquire a beauti-



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ful silver-grey plumage. However, the hens remain almost the same, perhaps a little brighter and greyer. Through selective breeding, Cole has produced hens which, over the years, have become much lighter and therefore resemble the cock more closely, including the presence of a skullcap, dark legs and black eyes. Therefore, it can be said that the young do take on the color of the hen.

Single and Double Factor Birds

A remarkable feature of working with the Dominant Silver mutation is the appearance of Single and Double Factor birds. The description of the Single Factors are as written above. However, Double Factored birds are responsible for a further dilution: these individuals are almost the color of Lutinos, but show a grey wash and still sport the darker skullcap, along with dark legs and black eyes.

According to Cole's breeding records, the mutation is dominant and the breeding expectations do follow the inheritance mode of the Normal Grey. Pairing a Dominant Silver with a Normal Grey produces both Dominant Silvers and Normal Greys in the nest in the first generation. It makes little difference whether the Dominant Silver is the cock or the hen, as it does not function as a sex-linked mutation would. Nor is it hidden as a recessive mutation, producing only split birds which would require being bred back to the mutation in order to produce visuals.

Breeding results are always clear, too, when working with a *dominant* mutation. Since Dominant Silver is *dominant*, the young Normals produced from a Normal Grey x Dominant Silver pairing *cannot* be split for Dominant Silver! So, in essence, "what you see is what you get"!

Pairing together two Dominant Silvers will result in a small number of Normal Greys, along with Single Factor Dominant Silvers and Double Factor Dominant Silvers. The Double Factor Dominant Silvers are again easily identifiable as they are extremely light as the result of a further color dilution. It is assumed that pairing Double Factored Dominant Silvers together would yield all Double Factored Dominant Silvers in the nest; however, this has yet to be documented.

When pairing Dominant Silver cocks to other established mutations such as Cinnamon-Pearl-Pieds, etc.,

the Dominant Silvers produced will also be split for the other mutations in the same manner as if one were working with Normal Greys. These Dominant Silver splits can then be bred back to other Dominant Silvers to produce the numerous combinations of Dominant Silver cross-mutations, providing, of course, that

the correct crosses are used. Indeed, Cole has produced Whiteface Dominant Silvers which he feels are the most pleasing combination and suggests the name "Platinum" since they appear metallic-looking after losing all traces of yellow lipochrome pigment, caused by the introduction of the recessive Whiteface factor. This

Breeding Expectations of Recessive Silvers

Normal Grey x Normal Grey/Silver	=	50% Normal Grey 50% Normal Grey/Silver
Normal Grey x Silver	=	100% Normal Grey/Silver
Normal Grey/Silver x Normal Grey/Silver *	=	25% Normal Grey 50% Normal Grey/Silver 25% Silver
Normal Grey/Silver x Silver	=	50% Normal Grey/Silver 50% Silver
Silver x Silver	=	100% Silver

KEY

/ = denotes heterozygous or "split to"

* = This "split to split" pairing is known as a 1.2.1 ratio (i.e. 25% homozygous Normal, 50% heterozygous, to 25% homozygous mutant)

Theoretical Expectations for Single Factor and Double Factor Dominant Silvers

Parents:		Offspring:
Single Factor x No Factor	=	50% Single Factor 50% No Factor
Single Factor x Single Factor	=	25% No Factor 50% Single Factor 25% Double Factor
Single Factor x Double Factor	=	50% Single Factor 50% Double Factor
Double Factor x No Factor	=	100% Single Factor
Double Factor x Double Factor	=	100% Double Factor

KEY

Single Factor = Dominant Silver

Double Factor = Dominant Silver Dilute

No Factor = Normal Grey

NOTE: It is assumed that it would initially be undesirable to pair the following mutations to Dominant Silvers: Lutino or Whiteface-Lutino (i.e. Albinos), which could *mask* the color. Cinnamon, which could modify or dilute the color further. Fallow which could modify or dilute the color further.

Recessive Silver would be hidden as a recessive and it is not known at this time how the color would interact. Until more is known, it may be advisable to cross Dominant Silvers with Normal Greys and possibly Pearls, Pieds and Whiteface combinations.

could cause some future confusion since there are already some U.S. breeders who choose to call the Fallow-Recessive Silver cross mutation by the same name. Hopefully, such confusion can be avoided if all agree on using similar terminology.

Of future interest might be how Double Factor Dominant Silvers would appear when bred with other standard cockatiel mutations. I have speculated the possibility of a similar feature at work in the Fallow variety which is known to appear in a range of shades, and which might have some other possible factor involved since it acts as a dilute. However, I would discount any cross-mutations of Double Factored Dominant Silvers (or Fallows for that matter) with Cinnamon, as I believe the latter has the tendency to modify or dilute the original color of certain mutations, e.g. Whiteface, etc.

The Dominant Silver is now a well-established, but small population in the United Kingdom. Although we may one day hope to acquire the Dominant Silver, it is entirely possible, as history has shown us with other psittacine species, that the very same mutation could spontaneously appear in other parts of the world within or near the same time frame, and so could even make an appearance in any of our aviaries one day! Of course, the likelihood, although possible, would be small.

Thanks to Cole's diligent work with sound principles of selective breeding, the color of the Dominant Silver has not only been stabilized, but its size and reproductive capabilities are reportedly good, and it appears to be a robust bird without any obvious genetic problems. Rather than ruthlessly pairing the new mutation to less suitable partners for quicker results, the responsible, smarter path was chosen. In the end, several breeding seasons may actually be saved and the results much more worthwhile. Such extra careful husbandry practices are to be commended, as they serve to benefit us all, not only the current generation of birds produced, but their future progeny.

References

- Cole, Terry, "Firsts with the Dominant Silver Cockatiel", *Cage and Aviary Birds*, p. 2, August 13, 1988. United Kingdom.
 Rubin, Linda S., "The Complete Guide to Cockatiel Color Mutations", Chapter 10, "Silvers and Fallows" Newton, MA, c. 1988. ●

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