

# Allelism of Crested Traits in Columba Livia and Streptopelia Risorica

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## Abstract;

Dr. Miller proposed a project of mating a Pigeon (Columba Livia) and a Ring Neck Dove (Streptopelia Risorica), both with the trait of a crest of feathers at the back of the head. In pigeons there are point crest and different degrees of shell crest. In ring neck doves there is only the point crest. In this study only point crested pigeons were used. Under classic genetics if the two species produced a hybrid young with the trait of a crested bird and the trait is autosomal recessive in both species then it is assumed that the genes that produce that trait in each species are alleles to one another.

## Results;

The F1= Crested species hybrid demonstrating allelism between the two crested species from the mutant hatched.

### Crested Pigeon

Band number CG 603 09

Breed; Classic Old Frill

Weight;

Male

Color, genetics: brown, recessive red, frill and t

stencil (e//\_ Ts//Ts fs//fs b//b gr//gr//cr//cr)

### Crested Ring Neck Dove

Band number 789 C

Weight;

Female

Color, genetics; peach (d<sup>b</sup>//\_ ry//ry Ta//Ta cr//cr)

### Crested Hybrid

Band number AJ 1149 09

Weight;

Color, genetics; e//\_

Ts?//?Fs?//? b?//? gr//?

## Discussion;

I first tried a pigeon breed that is called a male Archangel to breed to a crested female ring neck dove. This breed was chosen because of the rich bronzes involved in its color. I had many troubles with illness in both species when I put them together in breeding cages. Because of this I was never able to obtain a fertile egg from that crossing. My clinical impression of the pathology involved was from a virus that the two species passed from one to the other. So I decided to use a hardy breed of point crested pigeon called a Classic Old Frill. It has a number of recessive color traits that are needed in combination to achieve the color of the bird. Then base color of the bird was brown with at least heterozygous recessive red. (from other breeding tests done on other pigeons). The Classic Old Frills also have what is called grouse legged feathering on the legs and feet. It is a partially dominant trait. The Ring Neck Dove was a peach color.

The hybrid is wild type Ring Neck Dove color except for the red tipped feathers. This is common in pigeons that heterozygous recessive red birds have red tipped feathers in juvenile feathers.



I have some what a limited experience with pigeon/ring neck dove crosses, but this is the first one I have seen that is wild type ring neck dove color except the lacking ring on the back of the neck and red tipped feathers. It also has some feathers growing down the sides of the lower legs which are consistent with heterozygous grouse leg. It has an obvious crest at the back of the head. It is lacking the ring on the back of the neck. I didn't have any size seven bands available in the 2011 year so I used a 2009 year National Pigeon Association band.

I am assuming that the redness on this hybrid will disappear with the molt as it does in pigeons that are heterozygous recessive red.



The birds were kept in a 2ft by 3ft by 2ft tall all square wire breeding cage. They were feed scratch grain. The room they were kept in was a well ventilated 8ft by 8ft by 8 ft building with about 30% of the wall space windows for adequate natural light. I found that the birds needed a perch to stand on for breeding purposes. had a  $\frac{3}{4}$  inch by 1 inch bar across the cage as a perch.

I had a DNA sex determination test done on the hybrid from Avian Biotech International and it came back as a male. With the false pearls eyes this give an indication that wild type color of the dove is an allele with brown in pigeons.

This project leaves with more questions concerning the alleles of color of the two species.

I found that the University of Utah Genetics Department was interested in this project so there were tissue samples sent for DNA analysis. He results were they are alleles and different mutations form each other on the same gene.

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James R Demro, D.D.S. copy right 2011