

## A POSSIBLE NEW MUTANT, HALLUX NAIL SPIKE, IN RINGNECK DOVES

by  
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Rather recently I had two male doves of superficially unrelated stocks that developed an enlarged and straightened toe nail on the rear toe (hallux) of the right foot. The nail is over a half inch long. For a time I thought there was nothing particular about it, since it was asymmetrical and the birds were of stocks I thought had little common ancestry. For some strange reason I was reminded of the hand spike on the front leg hallux of Tyrannosaurus? Birds are little dinosaurs, you know. And Tyrannosaurus's spike had to be inherited!

The immediate pedigree showed some inbreeding. New genetic recessives generally do "pop out" from inbreeding. Therefore, I changed my mind! The spike could be inherited rather than be happenstance! After all, two birds did show it! I went through my dove pedigree for about 10 generations back. Sure enough, 6 ancestors were in common and could be the source of the possible new mutant for the two lines. But I had to go back more than 4 generations to find the closest common ancestor.

Since they are both males, I cannot make an immediate test of the inheritance. Also, maybe it is sex-influenced or limited like the beard in man or the mane in lions (or spurs in cocks). Anyway, it will take a while to get data from their progeny in crosses.

Meanwhile, the utility of keeping pedigrees shows up here. Both 610P and J167V had to be inbred! Further, they ought to have at least one ancestor in common before the linebreeding in order for both to exhibit the character. They had 6, actually more of course, but the mutant had to be "passed through" at least one of the 6.

The numerical calculation of the inbreeding coefficient (F) is not necessary. But curiosity prompted me to work out a minimal value, at least.

610P has an F value of approximately .08

J167V has an F value of approximately .06

Such a value means that 8% more of the gene loci in the inbred individual are homozygous (=the same=double dose) than found in non-inbred individuals in a random bred population for 610P. And, similarly, 6% for J167V.

You can peruse the pedigree for yourself in the accompanying figure of a line diagram pedigree for these two doves.

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Relationship of the hallux nail all spiked individuals

