

PSITTACULA SIGHTINGS

An Overlooked Mutation

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Take a good look at pictures number one and two that accompany this column. Can you identify the mutations pictured in photo number one? If you came up with turquoise, congratulations are in order. Both birds are indeed turquoise, however, they are obviously not the same.

Now, look at the second photograph, can you identify these mutations? You would be correct if you identified both birds as gray-green. Again, one is slightly different from the other.

In photographs one and two, the birds with the lighter body coloring, flight and tail feathers are exhibiting an additional mutation characteristic. Unnamed, mis-named, mis-identified, overlooked and ignored, this mutation has been in American aviaries for at least 12 years, perhaps longer. It has been looked at, but not really seen.

Once pointed out, the mutation is so easy to spot thereafter, it makes you wonder how it ever eluded perception previously. The visual markers are unique. The overall body color is lighter and more yellowish. Brown melanin replaces black melanin as seen in the wild type green, blue, turquoise and gray-greens. The flight

and tail feathers are lighter. Although variable, a larger surface area on the flight feathers is colored like the body, and creates a subtle pattern. In heavily marked birds, the feathers look like they have been bleached. Open the wings and look at the flights closest to the body . . . the dorsal sides of the feathers are often marked with whitish "hash" marks perpendicular to the feather shaft.

The eyes, and the rings around the eyes of newly hatched and naked chicks are reddish, but not as red as the eyes on the lutinos or albinos. As the chicks grow and feather-out, the eyes darken, and no longer look red or ruby colored.

This mutation is a form of cinnamon. It's an exciting mutation since it can be used to alter every other color including the wild type, or normal green. In pure white albino birds, the identifying characteristics are masked, but the presence of this form of cinnamon can still be confirmed through genetic tracking of offspring exhibiting the mutation.

Inheritance Mode

Genetically, this mutation is a dominant inheritance type, meaning that at least one bird must visually exhibit the mutation characteristic in order to produce more mutation birds. There are no splits with dominant inheritance types. The theoretical expectation for production of mutation chicks using one visual parent, is approximately 50%. If both parents are visual with the same dominant characteristic, approximately three out of four (75%) of chicks produced will exhibit that dominant mutation characteristic.

You might be asking at this point, why don't you get 100% visual mutations when both parents are visual dominants? The answer lies in the genes of each parent bird.

Understanding the difference between heterozygous and homozygous is the first step:

- A. When only one allele in the chromosome pair has the characteristic gene, the bird is said to be **heterozygous**.
- B. When both alleles have the char-

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acteristic gene, the bird is said to be **homozygous**. (Note: Heterozygous and homozygous are occasionally called single factor and double factor, respectively. However, single and double factor are not specific enough terms, and therefore won't be used in this discussion.)

In order to produce 100% visual offspring for a particular dominant characteristic: both parents must be visual, and *one or both* parents must be **homozygous** for that mutation characteristic. That sentence is a mouthful.

Don't feel bad if you have to read it over several times allowing the information to sink in.

Unfortunately, it's not possible to visually identify heterozygous and homozygous chromosome types. DNA studies will answer these questions some day with a simple blood test, but for now, the identification of heterozygous and homozygous birds requires test mating, perhaps for many seasons. Positive identification for heterozygous is easily accomplished. Homozygous is more difficult. This aspect of genetics

will be covered in a future issue.

Proposed Name

Now that this cinnamon-type mutation has been visually and genetically identified, we need a name. It has been called cinnamon, Isabel, and more recently fallow.

Cinnamon occurs in three different inheritance forms, dominant, sex-linked and recessive, so just saying "cinnamon" is not descriptive enough. Isabel is an European term, which is now virtually meaningless here in the U.S.A. because it's been used to describe anything resembling cinnamon, regardless of the inheritance type. Fallow is the name generally given to a red-eyed, recessive cinnamon mutation.

Since none of these names seem to be appropriate, how about recognizing the mutation as **dominant cinnamon**? This is a name that is not too fanciful, and yet clearly identifies the mutation visually and genetically.

Order of Naming

Birds exhibiting more than one

visual mutation should be identified by naming in a standard order as well. The name dominant-cinnamon, would precede any other identification of a mutation or color. For example, in photo number one, the lighter bird would be called a **dominant-cinnamon turquoise**. In photo number two, the bird on the right would be officially recognized as **dominant-cinnamon gray-green**, as opposed to gray-green dominant cinnamon. A blue bird exhibiting this mutation would simply be called a **dominant-cinnamon blue**.

There are four genetically different ways to produce the light gray mutations that qualify for the name of silver. As much as we all like the sound of the name silver, we should avoid using it. We should strive to use the clearer and more concise names precisely because there are multiple genetic forms. **Dominant-cinnamon gray** would be the correct name for the gray mutation modified by the mutation discussed in this column. Since it's understood that the gray mutation exists only as a dominant in ring-necked parakeets, it's not necessary to say dominant-cinnamon dominant-gray. Someday a sex-linked or a recessive gray may be produced, and we'll have to update the nomenclature accordingly.

American Standard of Nomenclature Proposed

The newest mutations and combinations are fueling an explosion of enthusiasm by aviculturists. This is a very exciting time for mutation bird breeders everywhere. Conversations about the seemingly endless color possibilities keep the phone lines buzzing across the country. Sales of mutations have never been better.

In spite of (or perhaps because of) the flood of articles and a new book on the subject, buyers and sellers are experiencing communication difficulties. Doing business or getting help with pairings is incredibly tough because we're not all speaking the same language. The problem is so bad, this might as well be Babel.

Read and compare any number of articles on mutations and you're going to feel more than a bit uncomfortable

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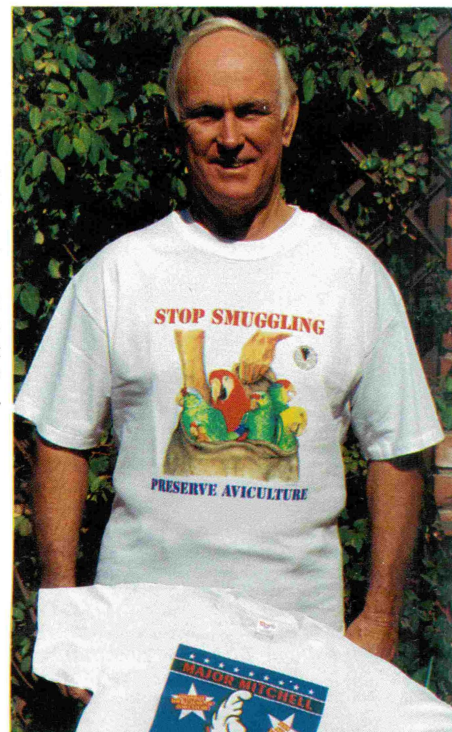
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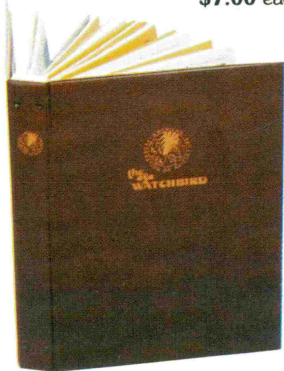
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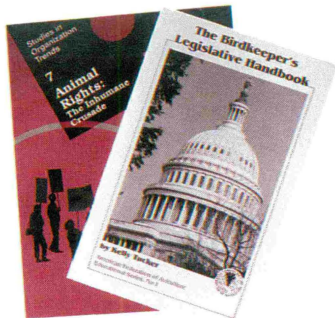


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Left to Right; turquoise, dominant-cinnamon-turquoise.



Left to Right; dominant-cinnamon gray-green, gray-green.



Left to Right; dominant-cinnamon gray-green, sex-linked cinnamon gray-green. Although body coloration is similar, the unique markings on the flight and tail feathers clearly identify the dominant-cinnamon from the sex-linked cinnamon.

and frustrated with the contradictions. There are several reasons for the inaccuracies; typos, multiple names in use for each mutation, lack of proper genetic and/or visual identification, improper translation of names for mutation types from one species to another where no equivalent exists.

At the meeting of Asian parakeet enthusiasts at the August '96 AFA convention, I proposed the creation of an American Standard Nomenclature for *Psittacula* Mutations. This standard would govern the way a color mutation is formally defined and named based on genetic and visual information. The "Standard" would clean up existing confusion by providing one concise reference source.

During the discussion, it was suggested that the "Standard" be applicable to color mutations of all species. Even though there's a large body of information on mutations of various species, it's not all in one place. Can anyone be sure the definitions and nomenclature are consistent for Cockatiels, Gouldian and Zebra Finches, Budgerigars, and lovebirds, for example? To the best of our knowledge, a single reference source for mutations and nomenclature doesn't exist. A reference of this type would be an invaluable tool for mutation buyers, sellers, and show judges.

Obviously, because of the scope of the project, the "American Standard" is not something that can be done in a few days, weeks or months. It has to be a cooperative effort between recognized experts and hobbyists alike.

This year, and with the assistance of this column, we begin a long-term project to identify and name the various color mutations for the *Psittacula* genus, and especially the Indian ring-necked Parakeet. It takes years, especially with *Psittacula* to document inheritance modes of new mutations. Some will be easier to identify and name than others, and some have no equivalents in any other species. We will need to proceed slowly and carefully.

Please direct your ideas, comments, questions or concerns regarding the "Standard," to F. & L. Perry c/o the *afa Watchbird* at the AFA Business Office address in Phoenix, AZ. ➤

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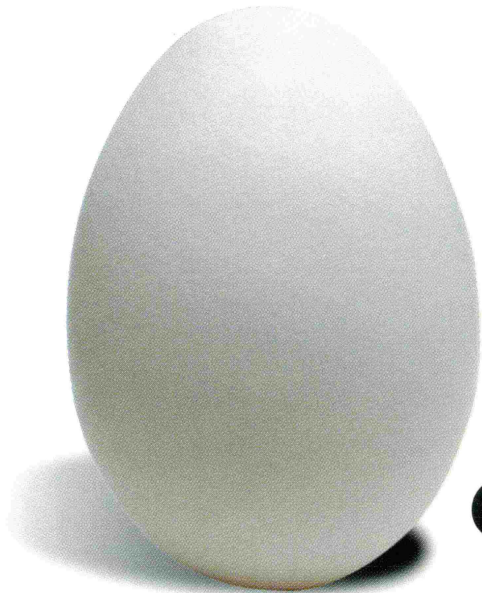
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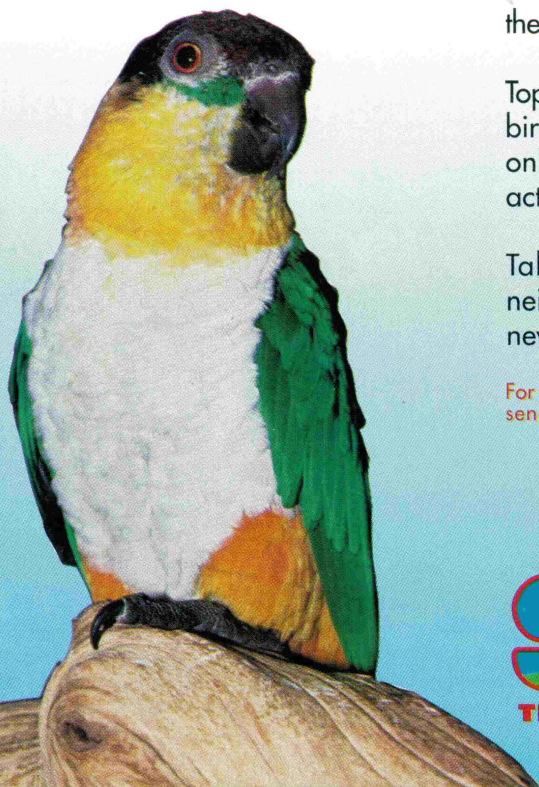


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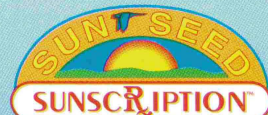
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