First breeding of the Blue-violet-gray-white Pied Ringneck Parakeet

by Jaynee Salan Lake Arrowhead, California, U.S.A. © 1990 U.S.A. and U.C.C. by Jaynee Salan

Mutagenesis, or the creation of a mutation, happens by nature's chance and design. Much of the genetic variation in a population is invisible, but manifests itself in subtleties, where we might see only tiny remnants of latent color patterns. Much the same way as a pool player banks his shots for the optimum results, the billiard balls roll and move around the table, as they combine, recombine and the colors mix and roll apart in constant new patterns of design, sinking into pockets along the perimeter of the playing field or table, in new color combinations as they come to rest.

Eight years ago when the yellow and green pied ringneck appeared in my aviaries, I visualized the possibility then of still another variegated color as beautiful as this one.

This new variegated colored ringneck did hatch in early 1990. And it's as beautiful as the name implies, the Blue-violet-gray-white Pied Indian Ringneck Parakeet.

The microevolution of a mutation takes great patience. As the future generations are bred in and out of the intermediate phases, dreams rise and fall until one day it appears. All the genetic rolls of the dice, the calculations of percentages, the averages and expectations can be anticipated, but not planned. Only when it becomes visual, does it become visual!

The computers can tell us what the odds are, but they can't make the visual appear. Much the same way Las Vegas can give us the odds of a horse race, they cannot create a winner.

When we started calculating this dream eight years ago, the yellow and green pied was used as a base bird. From that beginning, this stunning new combination of colors has appeared.

We learned from breeding members within the closed gene pool *only* that this yellow and green pied displayed an altered genetic code. The cells that produce pigment that produce tissue eventually made the colors in the feathers shut down a part of the genetic mechanism that produced melanin or the color blue. Melanin can be dis-



This beautiful blue-violet-gray-white pied above and the yellow-green pied below, its nestmate, are the products of multiple gene inheritance; a phenomenon known as 'Polygenic Inheritance?' The term "polygene" was introduced by Mather (1954) and summarizes this interpretation of quantitative inheritance.



These two beautiful pieds have come from the same parents, in the same nest in 1990. They are a visual display of "polygenic inheritance"



MUTANT BREEDING COMBINATIONS AND THEORETICAL EXPECTATIONS* INDIAN RINGNECKED PARAKEETS NORMAL GREEN, LUTINO, BLUE AND ALBINO

M Green split to Ino F Green (normal)	M Albino	Produces: M Lutino split to blue
Produces: 25% M Green 25% M Green split to Ino. 25% F Lutino 25% F Green 25%	F Blue 6.257 F Green split to blue 12.5% F Normal green 6.25% F Albino 6.2576	29. M Albino F Lutino split to blue Produces: M Lutino split to blue
2. M Green (normal) F Lutino	17. M Blue F Lutino split to blue Produces:	M Albino
Products: M Green split to Ino	M Blue split to Ino	30. M Lutino F Albino Produces:
F Lutino Produces: M Lutino	18. M Blue split to Ino F Lutino split to blue Produces:	M Lutino split to blue 50% F Lutino split to blue
M Green split to Ino. 25% F Lutino 25% F Green 25%	M Lutino split to blue	31. M Lutino split to blue F Albino Produces:
4. M Lutino F Green (normal) Produces:	F Blue	M Lutino split to blue .25% M Albino .25% F Lutino split to blue .25% F Albino .25%
M Green split to Ino 50% F Lutino	19. M Green-split to Ino and blue F Blue	32. M Blue F Albino Produces:
F Lutino Produces: M Lutino	Produces: M Blue split to Ino	H Blue split to Ino
F Lutino	M Green split to blue .12½% F Lutino split to blue .12½% F Blue .12½% F Green split to blue .12½%	F Albino Produces: M Blue split to Ino
Produces: M Green split to blue	F Albino	M Albino 25% F Blue 25% F Albino 25%
F Green split to blue	Produces: M Blue split to Ino	34. M Blue split to Ino F Lutino Produces:
F Green split to blue Same as in 6. 8. M Green split to blue	F Albino	M Lutino split to blue
F Green split to blue Produces: M Blue	Produces: M Albino	35. M Albino F Green split to blue
M Green split to blue 25% M Green 12½% F Blue 12½% F Green split to blue 25% F Green 12½%	M Lutino split to blue .25% F Albino .124% F Lutino .124% F Lutino split to blue .25%	Produces: M Green split to blue, Ino. .25% M Blue split to Ino. .25% F Lutino split to blue .25% F Albino .23%
9. M Blue F Green (normal)	22. M Blue split to Ino F Blue Produces:	36. M Green (normal) F Albino
Produces: M Green split to blue	M Blue split to Ino	Produces: M Green split to blue, Ino 50% F Green split to blue 50%
10. M Green (normal) F Blue Same as in 9.	23. M Lutino split to blue F Green split to blue	37. M Green split to Ino F Albino Produces:
11. M Blue F Green split to blue Produces:	Produces: M Blue split to Ino 124% M Green split to Ino and blue	M Green split to blue, Ino
M Blue .25% M Green split to blue .25% F Blue .25% F Green split to blue .25%	F Lutino	38. M Green split to blue F Albino Produces:
12. M Green split to blue F Blue Same as in 11.	F Lutino split to blue Produces: M Lutino	M Green split to blue, Ino. .25% M Blue split to Ino. .25% F Green split to blue .25% F Blue .25%
13. M Blue F Blue	M Lutino split to blue	39. M Green split to blue, Ino F Albino
Produces: 50% M Blue 50% F Blue 50%	F Lutino split to blue	Produces: M Green split to blue, Ino
14. M. Lutino F Blue Produces.	25, M Albino F Albino Produces:	M Albino
M Green split to Ino and blue50% F Lutino split to blue50%	M Albino 50% F Albino	*The above theoretical expectations are
F Lutino Produces: M Green split to Ino and blue 50%	F Green (normal) Produces: M Green split to Ino and blue50%	based on an infinite statistical universe and assume that all eggs laid are hatched and successfully raised.
F Green split to blue	F Lutino split to blue 50% 27. M Albino F Blue	Expectation as a Percent of 100 Expected Offspring
Produces: M Blue split to Ino. 6.25% M Lutino 6.25% M Lutino split to blue 12.5%	Produces: M Blue split to Ino	50% = 1 in 2 25% = 1 in 4 12½% = 1 in 8 6¼% = 1 in 16
M Green split to Ino 6.25% M Green split to Ino and blue . 12.5%	28. M Albino F Lutino	 The Auk, Vol. 83, 1966, ppg, 667-668, Schnell and Caldwell. ■

played in an array of cryptic colors such as blues, browns, grays, blacks or the lack of them. This is what we determined produced the beautiful yellow and green pied. The melanin production ceased in some areas of the bird's body and allowed the lipochrome (yellow) to show in its pure form. Yet in other areas, the bird still produced melanin, making the color green visible.

The turning on and off of a brand new genetic code mechanism to produce the beautiful variegated color pattern is the essence of the yellow and green pied ringneck that was developed at our ranch here in California in 1983.

Then I wondered what would happen if we introduced new colors into this already variegated color pattern. We did and the Blue-violet-gray-white Pied Ringneck appeared.

The theory stands now that this new mutation is the product of a third gene alteration, another new genetic code never seen before that shuts down the producing lipochrome cells to visualize melanin colors only and nothing else.

The Indian ringneck is a marvelous aviary bird to breed because it seems to have an endless color spectrum. Although the ringneck is found in the wild by the thousands throughout India, they are nomadic by nature and do not form strong pair bonds. Therefore, they can be paired year by year in a multitude of color combinations to produce the 18 or so color mutations that now exist. One of the most commonly circulated color expectation charts* was reprinted to illustrate Rae Anderson's article in the April/May 1977 Watchbird magazine, and is again presented here for a frame of reference.

Due to the extremely complex color pattern that is displayed on this new Blue-violet-gray-white Pied, we now believe this to be one of several color keys. 1) Analogous: three to six colors adjacent to a key color with one color in common. 2) Triadic: three colors that are evenly and equally spaced from each other forming a triangle of color. 3) Tedrad: a double complementary contrast as illustrated by a square or rectangle of color. 4) Split Complementary: a key color combined with the two colors that are next to its complement.

Test breedings will be enchanting and fruitful. I cannot wait to see what the third pied color mutation will look like! ●

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