



# The Show Budgie

For Show Budgie Breeders and Exhibitors

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Published by  
The Nel Brothers Stud

## Genetics

DNA is the basic building block for life on earth. Genes are made up from DNA (deoxyribonucleic acid), and it is genes that contain the instructions for cell activity. The genes are located in long sequences called chromosomes.

In reproduction, the chromosomes in each parent divide in two, and the resulting organism receives half of its genetic make up from each parent. Genes control every aspect in the new organism, and some characteristics are the result of multiple genes working together. In budgerigars, variety is determined with a single gene for each variety, making things somewhat simpler.

On each chromosome, the genes line up in pairs. The corresponding genes are called alleles. Each characteristic is controlled by two alleles that line up at a certain position on a chromosome. When reproduction occurs and the chromosomes split, a single allele is passed on from each parent to the offspring, so that it will also have a pair of alleles for each spot on the chromosomes.

With determining the variety of budgerigars, a pair of alleles determines whether or not the bird will be a certain variety. With dominant varieties, the bird will show that variety if it has one or both of the alleles for the variety. With a recessive variety, the bird needs both alleles for the variety in order for the variety to manifest in that bird. If only one allele is present for a recessive variety the bird is said to be split for that variety, and can pass the allele on to off-spring.

The genetic makeup of a bird can be represented using letters of the alphabet, with a pair of letters for each variety. If no alleles are present for a variety, then lower case letters are used, if an allele is present then upper case letters are used. For example, if a bird had two alleles for the Grey variety, this could be represented by GG, where a bird with one allele for grey could be Gg or gG, while a bird with no grey in it would be gg.

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## The J.S.B.S

The Jacaranda Show Budgie Society, created in October 1998, is up and running and is based on active participation. All members will have to be actively involved in the club activities and/or BSSA activities. The club was created out of the need for a club with active members. The JSBS has its head office in Pretoria, the Jacaranda city, and welcomes all people who would like to actively participate in all activities surrounding their hobby to contact our treasurer for more information. The JSBS will also be a club like no other as we will have no members who do not participate. A set of guidelines have been set up for new members to read. These are available on request. We are ready for the millennium are you and your club ?

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ISSUE

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## **Budgerigar Health**

### **~French Molt~ Part 3**

Dr. M.D.S. Armour, in his book, *Exhibition Budgerigars*, he rejects inbreeding as a cause, but expresses the belief that the problem is caused by a type of mite. It gnaws a path to the roots of the pin feathers and causes an infection that inhibits their growth. The infection irritates the skin, causing the bird to bite and pull at the feathers, thereby aggravating the condition. Dr. Armour is certain that the mite saps the feathers ability to grow. He points to the dark mass that can be found at the bottom of the shaft of feathers that have fallen out. Many breeders accept Dr. Armour's theory because it accounts for a number of symptoms associated with French molt. The dirty, red fluid in the shaft could be caused by blood associated with the infection and the dirt could be the excrement of the mite. Because the mite infection could occur at any time, it is consistent with finding cases of French molt in the second and third brood as easily as in the first. It also explains why certain birds are affected to a worse degree than others. And it accounts for cases of continuous molt in older birds, which, naturally, can also be infected by the mite. Therefore if one could prevent mite infestation, problems with French molt could possibly be avoided. As a cure, Dr. Armour recommends chloroxylenol, an antiseptic that is safe for use with pets. He recommends removing all infested feathers and then dipping birds in a bath of warm water to which a tablespoon of chloroxylenol has been added.

Repeat the treatment every three or four days, and infested birds will recover completely. The repeat treatment in a chloroxylenol solution serves to kill mite eggs and larvae. The birds aren't damaged by the treatment, even if they get some of the solution in their mouths and eyes. Put treated birds in a cage without sand on the floor for several hours. After they have dried, they will look fresh and fit. Dr. Armour also says not to use birds with bloody pin feathers for breeding until they have been treated and have recovered fully. If you breed from affected birds, you will almost certainly find that one or both parents had the tell-tale bloody pin feathers. According to Dr. Armour, you will never raise birds with French molt if you treat all breeding stock with chloroxylenol before breeding. French molt sneaks up on your flock without warning and must be prevented at any cost. This is a clear case of where an ounce of prevention is better than a pound of cure. The preventive recommended by Dr. Armour is disinfecting the cages with sulphur-fume or spraying them with chloroxylenol twice per week. American scientists believe that French molt is a dietary deficiency caused by improper feeding. They also believe that the trouble also has a hereditary form. Dr. Steiner of the University of Zurich (Switzerland) agrees with the hereditary explanation and calls the problem a type of genetic degeneration. Dr. Steiner holds that French molt cannot be caused by a dietary deficiency.

Continued next month

## **~Tip of the Month~ Savaged Chicks**

If the parents see the developing chick as a threat to the nest sight they will try to chase the chick away from the nest. A hen will usually be responsible for savaging a chick while still in the nest, while a cock will most likely savage young in the cabinet. If this problem occurs, remove the offending parent or foster out the chicks. If the young can feed themselves, remove them to the young bird cabinet.

Feather Plucking can also occur when the chicks are in the nest. If the chicks develop small scabs and are losing feathers, foster them out, or remove the offending parent. If the hen is feather plucking, remove her if the chicks are big enough to keep themselves warm (usually after 2 weeks), but if they are not old enough then foster them out. If the cock is feather plucking, remove him regardless.

**Remember the club show rolls -  
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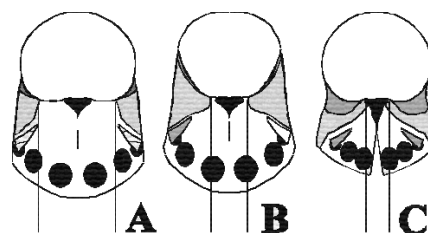
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## **Assessing Budgerigars**

### **Feathers adjacent to cere**

**A - Ideal  
B - Too Narrow  
C - No Space**

by Niels-Erik-Hansen



## Genetics, continued

### Dominant Varieties

With the dominant varieties, the bird needs only one allele out of the two to be for that variety. The dominant varieties are Australian Dominant Pied, Dutch Dominant Pied, Continental Clearflight, Grey, Violet and Spangle. Taking the example above with the grey bird, the birds with makeup GG, Gg, and gG would all appear grey, while the bird with gg would appear normal. This example can be applied with all of the dominant varieties, with the exception of spangle. Birds with one allele for the spangle variety will appear spangle, while birds with two alleles appear self-coloured. A bird with make up ss would be normal, Ss or sS would be single-factor spangle, and SS would be double-factor spangle, appearing to be all white or all yellow.

### Recessive Varieties

The recessive varieties are Danish Recessive Pieds, Clearwings, Greywings, Dilutes, Saddlebacks and Fallows. In order for the variety to manifest in a bird they need both alleles for the variety. A bird with type CC would appear as a clearwing, while Cc or cC would be called 'split for clearwing' and would appear normal, while cc would be the normal bird. Recessive varieties that are split can pass the variety or the normal onto off-spring, depending on which allele is inherited.

### Colours

The colour of the bird is also determined with a pair of alleles. The blue series of birds is the result of a recessive colour gene. In order for a bird to appear blue, it must have two alleles for the colour. A bird with one or no alleles for colour will appear green. Using C for the colour allele, a bird with cc, Cc or cC would appear green, while a bird with CC would be blue. The shade of colour is controlled with another gene, those birds with no alleles for the colour modification will be light green or sky blue, those with one allele will be cobalt or laurel, and those with two alleles will be mauve or olive.

### Sex-Linked Varieties

The chromosomes that are used in determining the sex of an organism are called the X and Y chromosomes. The X chromosome is similar to other chromosomes and carries genetic information, however, the Y chromosome is smaller and almost devoid of information. In budgerigars the male has two X chromosomes and is represented by XX, while the female has one of each chromosome and is represented by XY. The varieties Opaline, Lacewing, Ino and Cinnamon are determined by alleles on the X chromosome. In the male bird, the varieties function like a recessive variety. In the female bird, the Y chromosome has no matching allele for the variety, so the female is determined by the one X chromosome. If an allele is present then the variety will manifest, if it is not present then the bird will be normal.

If O is used for Opaline, in the male birds OO will be Opaline, Oo and oO will be split for Opaline and oo will be normal. In the female, OY will be Opaline, and oY will be normal. The male passes on one of his X chromosomes to off-spring, while the female can pass on the X chromosome, making the off-spring male, or the Y chromosome, making the off-spring female.



## Colours from a different angle

by Deon Davie

Breeder "A" wants to breed quality split lacewings, in order to produce quality lacewings the following season. He pairs a Grey Green cock to a white Lacewing hen. This pair produces the following offspring:

1. Grey Green cock
2. Lutino cock
3. Lutino hen

Let's look at the offspring:

### 1. Grey Green cock

He will be split for Lacewing.

He will also be split for blue.

If this Grey Green is mated to the following hens, his offspring will be as follows:

### Grey/Blue hen

- 12,5% white and 12,5% yellow Lacewing hens
- 12,5 % green and 12,5% blue hens
- 25% green and 25% blue cocks (12,5% split Lacewings)

### Green hen (Not split blue)

- 25% yellow and 25% green Lacewing hens (12,5% split blue)
- 50% green cocks (25% split Lacewing)

### White Lacewing hen

- 12,5% yellow and 12,5% white Lacewing/blue hens
- 12,5% green and 12,5% Grey/blue hens
- 12,5% yellow Lacewing/blue cocks
- 12,5% white Lacewing cocks
- 12,5% green split Lacewing cocks
- 12,5% Grey/blue split Lacewing cocks

### 2. Lutino cock

The fact that the original Grey Green produced a Lutino cock indicates that this Grey Green father is split for ino.

Lutino cock will be split for Lacewing, and for blue.

(Lacewing factor of mother is diluted by ino factor)

Can be used to produce Lacewings in the same way as Grey Green offspring.

Can be used to produce Lutino's and Albino's, but this is not recommended as he is split for Lacewing.

### 3. Lutino hen

To produce a Lutino hen, in the mentioned mating, the father of this Lutino hen must be split for ino.

Lutino hen will be split blue, as her mother is a white Lacewing.

Lutino hen will not carry any Lacewing.

If mated to a Albino cock or Lutino split blue, she can produce Albino's.

It is not recommended to use Lacewing or Cinnamon with Lutino's or Albino's, as the brown wing markings will appear on the Lutino offspring in future generations.

**South African Spangle  
Budgie Association**  
*for the furthering of the Spangle*  
*Established 4 October 1998*

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