

# CRESTS – What is a Crestbred?

By George Clarke

This may seem an unusual question to be asking at this late stage in the history of the breeding of Crested budgerigars, but from my research and from my discussions with Crest breeders, there is by no means unanimity of opinion when it comes to answering this fundamental question.

For many years, a Crestbred referred to a bird which had crest ancestry but did not display Crest. The term arose because breeders realised that the term split-crest (as used for recessive varieties) was not appropriate in the case of the Crest. Their breeding behaviour simply did not mirror that of the usual recessive split. Hence the term Crestbred came to be used to classify these birds.

Although there has always been differing opinions as to whether a bird bred from the Crestbred merits classification as a Crestbred or not, (due to their poor potential for crest breeding), there has until recently been no serious challenge to the general definition of a Crestbred. Every crest breeder knew what was meant when someone referred to a Crestbred. Not so today.

It seems that in recent times some Crest breeders have chosen to restrict the term Crestbred to those birds that show the crest in the nest but lose it at a later stage. One problem with this concept is that it inevitably leads in turn to the belief that “normal” looking birds that have never shown a crest at any stage are unable to carry the Crest gene, and we are eventually faced with having to explain the fact that a visual Crest can be produced from a pair of such birds.

Some breeders respond to this “impossible” breeding result by claiming that in their personal experience it has never happened. That is probably true, because the particular mating is rarely used, deliberately or knowingly, by serious Crest breeders and in any case the mating produces very few Crests. However, there appears to be considerable anecdotal evidence that the result can and does occur in the personal experience of numerous budgerigar breeders. This raises questions regarding the restricted definition of Crestbred.

Some others who use the restricted Crestbred definition take a different approach when explaining the production of these unexpected crests. Another classification is introduced to cover those Crestbreds that have never shown a crest in the nest but are still capable of producing Crests. The term “Crest related” is one such classification used. This approach simply subdivides Crests into two sub groups; those that permanently show a crest and those that show a crest only in the nest; while traditional Crestbreds become reclassified as “Crest related”.

Definitions are arbitrary and there is no “right” or “wrong” definition of Crest bred. Breeders are free to promote any definition which they find helpful, but unfortunately it makes it particularly difficult, even impossible, for breeders to discuss the issues if we all have differing personal definitions for Crestbreds. An agreed uniform definition is an essential prerequisite to understanding the nature of Crest inheritance.

It seems the differing definitions may have arisen due to breeders taking different positions regarding the appropriate classification of temporary Crests.

Crests have a wide range of expressivity from single feather through Tufts and Circulars to Multi-crests. I have found it most useful to consider temporary Crests (those that show a crest in the next but lose it later) as being genetic Crests with very low expressivity. In my view these birds should not be classified as Crestbreds; they have expressed the Crest; they are positive for the Crest gene; they are genetically Crests. Traditional Crestbreds on the other hand, because they have never shown a crest, may or may not carry the Crest gene. They fall into the doubtful basket as far as Crest genes are concerned. My justification of adopting this approach of sticking with the simpler and more traditional definitions for Crest and Crestbred is that it has led me to a coherent and demonstrably accurate PE theory of Crest inheritance. We now have a theory of crest inheritance which works. There is no reason to alter the traditional definitions.

Crests, although neither strictly Dominant nor Recessive in behaviour, sometimes appear to behave as if they are dominant and sometimes as if they are recessive. Overall, Crests do in fact behave more like a recessive variety than a dominant variety. When mated to a Normal only about one in six progeny will be visual compared to 50-100% for a dominant variety, or zero for a recessive variety. If this thought is kept in mind the idea that a crest gene can be carried by a visually normal bird will not seem so strange. Any bird which has Crest ancestry but has never shown a crest, may (or may not) carry the Crest gene and such birds are appropriately defined as Crestbreds by the majority of Crest breeders. Those Crestbreds that do carry the Crest gene (SF) have Crest breeding potential, those without the gene (ZF) do not. Visually they are identical.

Ref 3, scheduled for publication early 2006, discusses ways to assess the number of Crest factors (genes) present in Crests and Crestbreds.

<b>Classification</b>	<b>Crest Genes</b>	<b>Phenotype</b>
DF Crest	2	Crest
SF Crest	1	Crest
SF Crestbred	1	Normal
ZF Crestbred	0	Normal

The most reliable explanation of Crest inheritance currently available to Crest breeders has been fully explained in my articles on the PE theory, (Refs 1 & 2), while a concise single page visual overview of the theory is presented at Ref 5. The theory presents a fundamentally different approach to solving the problem of Crest inheritance, and breeders deciding to use the theory will find they need to be prepared to accept a few new ideas and to set aside some old ones. It is particularly important that they retain the traditional definition of Crestbred rather than the more recent restricted definition discussed above.

Some breeders remain hesitant to accept the PE theory in totality. Given the poor records of earlier theories I can understand experienced breeders may be reluctant to take on board yet another new theory and let go many of their ideas on Crest inheritance developed over a long period of struggling to understand the problem. Likewise, given the history, I can appreciate the difficulty they have in accepting that there is now a surprisingly simple solution which is also, for the very first time, accurate. Ref 4 represents a detailed assessment of the accuracy of the theory.

#### References

1. CRESTS – Toward a Better Understanding. George Clarke, CBCA, December 2004
2. The PE Theory for the Crested Budgerigar. George Clarke, Budgerigar World, Jan 2005
3. CREST – Assessing the number of Crest Factors. George Clarke. (2006?)
4. CRESTS – How Accurate is the PE Theory? George Clarke, CBCA, October 2005
5. A Visual Presentation of the PE Theory. George Clarke, CBCA, October 2005