**Breeding for Survival**

**By Jennifer Bell**

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Fertility, or the lack of it, in budgerigars today is an issue which engages the minds of many budgerigar breeders. In selecting for the characteristics which will put birds up on the winners bench we often compromise by sacrificing important things like fertility, stamina or longevity. Many years ago I read a book on breeding ducks and it suggested that in order to keep a stud which produced the optimum number of chicks it was not desirable to breed with birds which produced the best, under optimum conditions, but to breed those who could reproduce well under sub-standard conditions. I haven't consciously applied it to breeding budgerigars, but perhaps some readers may see merit in testing the theory.

The implications for budgerigar breeders are that we have to pay a lot more attention to those less visible factors, because without fertility, stamina and longevity both we and the birds are at severe disadvantage. How do we apply the principle? I think we need to look at the birds in our keeping, and the records kept, and note the birds which perform well under pressure. For example:

* *Old cocks and hens which remain fertile and raise young successfully*
* *Maiden hens and cocks which fertilise eggs and raise chicks first off with no problems*
* *Birds which are able to raise larger than normal clutches successfully*
* *Birds which foster chicks of various ages and colours without adverse reaction*
* *Birds which tolerate disturbance and handling*
* *Birds which have survived trauma or disadvantage and go on to reproduce well*
* *Birds which do not develop vices throughout their careers*

I believe initially all you can do is keep track of such birds and their off-spring so that you might identify the breeding lines, which will not be so obvious to track as, say, colour, but that are still traceable. Once you have identified your 'survivors' you can start working on perpetuating those traits.

Aren't we already doing this? I'm quite happy to have people disagree with me, but I sincerely believe that most breeders discard survivors more readily than they keep them. The bird that survives mutilation or other trauma gets its neck wrung or ends up in the pet shop. It is drummed into us repeatedly "dispose of birds with problems so that those problems will not be perpetuated". We all do this as a basic step in keeping our collections and studs "clean". I'm suggesting that we need to reconsider this if we want those less obvious advantages I've mentioned above.

Imagine a stud of budgerigars with high fertility, whose chicks exhibit superior survival characteristics and who are capable of breeding for more seasons than we accept as our lot at the moment. For line-breeding purposes a bird which can breed for six seasons is more valuable than one which can give you only two. That's obvious.

Many breeders pride themselves on the care they take of their birds. The birds are fed the optimum feed and vitainins, given optimum housing conditions, optimum health maintenance. The factors which exist in nature to cull out the weakest do not exist in such an ideal setting. Both our strongest birds (survivors) and our weakest perform as well as each other because the stressors which would normally dispose naturally of your flock's weaker members do not exist. The result of this is that you are keeping and breeding with some birds which do not have the survival factor. All goes well until, for whatever reason, optimum conditions are waived. Why are my birds falling dead off the perches? Why am I getting complaints from other breeders that the birds I sell them don't live long or that they fail to breed?

Another example: If for instance you customarily supplement the diet of your breeding birds with a product like Calcium Sandoz Syrup let's assume this assists laying birds to produce eggs with healthy shells. You may however have a bird who has a genetic predisposition to produce eggs without shells. The additive may prevent this and because you mask the predisposition by always supplementing with calcium, a contra-survival trait you don't even know about is being impressed into your stock. Birds you sell to other breeders may carry this predisposition which their own birds do not have. When the supplementary calcium is no longer provided by the new owner you could find yourself with a reputation for selling birds which lay eggs without shells.

You react with indignation saying, "It never happens in my breeding room!" and immediately blame the conditions in the premises to which the birds have gone. But whose fault is it really? Could it be yours? The problem may not be soft-shelled eggs, but any one or a combination of the problems which pursue budgerigars and their breeders.

How do you start assessing your livestock for survival traits? First step is to pay attention to the birds you already know are survivors. And the rest of the stock? It's a bit hard to suggest you be deliberately neglectful of your precious birds but you could start off by evaluating just a portion of your stock. Withdraw vitamin supplements, provide them with a less exciting or exotic seed mix, put them down to breed at "bad" or unconventional times, allow them to raise large clutches, expose them to harsher weather conditions, etc., etc. You may have a season with that family of birds where you produce birds which you regard perhaps as sub-standard, but understand that this is the result of environment, not heredity. The birds have the same inherent potential as before, but the results may be disappointing. On the other hand, if your family of birds produce the same quantity and quality of youngster when they are disadvantaged you really are onto a superior strain. The results of such an experiment, whether the yield is superior or inferior, may show you whether this family of birds are survivors. It may be a strain on the birds but if they can still reproduce well in spite of it then you are doing the right thing by your stock by strengthening it.

The reason your stock is strengthened is because you will think twice about persevering with birds who failed the test. Nature doesn't even think about it, any organism which does not have the traits necessary for survival dies and the rest of the flock or herd is healthier for it.

I am not suggesting you subject your birds to any form of cruelty or neglect, I'm suggesting you carefully increase the testing stress factors to which they are subjected. Stress exists abundantly in the wild and acts as a means of natural culling of the less able. You may wish to only work on one stress area at a time, such as letting a group of birds raise large clutches, leaving all other conditions unchanged. Another time or with another group you could withhold all supplements. Another time or another group you may decide to keep in a flight which is not as sheltered as is the ideal. Naturally, it's wise to have any birds being tested separated from the rest of your stock. It could be that just as with humans, susceptible birds, when subjected to even a low level stress could be more likely to succumb to bacterial and other infections. If that happens you have still learned something and you are protecting your main stock by removing it from birds which have the susceptibility.

If you do decide to follow up these suggestions, do it scientifically - keep accurate records and preferably have a control group of similar birds which receive normal treatment so that you can compare results. As well as culling birds based on their good looks and breeding performance, you can also cull based on their hardiness, their capacity for survival.