

Gouldian Finches head colour comes from their past and a subspecies - Jane Mullaney

Three years ago I read a study by Australian Researchers Sarah Pryke et.al. about how a Gouldian's head colour affects breeding and that black headed females do not pair as successfully with red headed males; that their offspring are more likely to die and the female/male ratio is skewed in favour of males.

To test this, the researchers painted the heads to change colours of the birds and found that a black head with a red dyed head would trick the hen into thinking it was red headed. She would consider him an inferior mate and have less live chicks to fledge, more of which would be male.

Sounds impossible right? I mean it's just a head colour. It has puzzled me ever since I read that study. How could a head colour impact on breeding when other head colour mutations in other birds do not?

I searched for answers with some scepticism because in the past I have had red and black headed breed without seeing any differences. I found that wild Gouldian finches were used for the study and not captive birds. Even bringing wild birds into captivity lost the effect.



Image from <https://phys.org>

Black and red headed wild Gouldian finches were genetically different and occupied different regions. The reds lived in drier more hostile regions and the blacks in more temperate, less arid. In the wild, competition for resources determines who lives and breeds. The reds competed harder and had to be more aggressive than the blacks. Then at some point, both populations met. This was where the differences were more apparent.

This could explain why, in the wild, black head dominate red by 3 to 1 whereas, if they had always been together, the red would be dominant. This also explains why the red headed Gouldian is said to be more aggressive than the black headed. It is because they **were a different subspecies**. This would also explain why those bred in captivity especially those captive birds in New Zealand don't become affected with the breeding problems; they aren't really red head and black headed any more. They carry the colour of their subspecies but share all the genes equally now.

By understanding that the wild populations were distinct genetically, that the red head colour belonged to a subspecies which was used to living in a harsher environment. That also explained why in the wild, black headed outnumber red. They have a better easier life; more food and water - and they get to live longer. If the red were really on to it, they would move in to the black zones and Gouldian populations are at critical levels but slowly coming back due to the efforts of the dedicated people including this group: <http://savethegouldian.net>.

More research is needed. Today Sarah Pryke is a senior lecturer at Australia National University. She has authored a number of articles on the Gouldian but not since 2011 and unfortunately for the Gouldian finch, her current work is on frill necked lizards.

References

www.gouldianfinches.eu

Pryke, S. R., et. al., (2011) Maternal stress to partner quality is linked to adaptive offspring sex ratio adjustment