

## Oxidative stress and the effect of parasites on a carotenoid-based ornament

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It has been drawn to our attention that Fig. 1A,C,D in *J. Exp. Biol.* **213**, 400–407 appears to show the same data as fig 1a,d,e in a paper published by (some of) the same authors in *Journal of Evolutionary Biology* (Mougeot et al., 2010). The authors wish to clarify the relationship between these two papers and rectify the lack of cross-referencing.

Both papers focus on red grouse and are outputs from the same large-scale field manipulation undertaken in 2006. They represent two, very different, stand-alone studies addressing different conceptual issues. The central experimental manipulation of both papers is the drug treatment of birds. The authors felt it was necessary to include background data in each paper to give the reader confidence in the efficacy of the experimental treatment and to allow the reader to better understand and interpret the main results of the papers, which explore very different physiological mechanisms that influence ornamental colouration.

For this reason, the treatment effects on parasite burden and comb colouration were presented in both papers, although a different index of comb redness was used [adjusted *R*-values (fig. 1e in *J. Evol. Biol.*) vs adjusted *R/(G+B)* values (Fig. 1C in *J. Exp. Biol.*)]. Both indices are accurate reflections of comb redness, gave similar results and have been used in previous studies in different contexts to characterize comb colour. Both papers also include the same data on levels of circulating carotenoids [Fig. 1D in *J. Exp. Biol.*; fig. 1d in *J. Evol. Biol.*]. The authors feel the inclusion of these data in both papers can be justified conceptually. In the *J. Exp. Biol.* paper, the trade-off between the use of carotenoids for colouring ornaments vs dealing with oxidative stress is central to the key question. In the *J. Evol. Biol.* paper, these data reinforce the argument that carotenoid levels and ornamental colouration covary with corticosterone levels.

The reiteration of background data on parasite removal and carotenoid levels does not compromise the uniqueness of each paper. The papers were submitted to, and published by, the respective journals in parallel, and the absence of cross-referencing was an oversight on the part of the authors, who acknowledge that the figure legends should have cited the corresponding paper and that the different indices used for comb redness should have been clarified.

Consequently, the text of Fig. 1 in the *J. Exp. Biol.* paper should have read:

Fig. 1. Mean  $\pm$  s.e.m. changes over time in (A) *T. tenuis* abundance (worms male<sup>-1</sup>) (reproduced from Mougeot et al., 2010); (B) comb area (mm<sup>2</sup>); (C) comb redness (adjusted *R/(G+B)*-value; see Materials and methods) (data from Mougeot et al., 2010); (D) plasma carotenoid concentration (mg ml<sup>-1</sup>) (reproduced from Mougeot et al., 2010); (E) plasma concentration of malondialdehyde (MDA; nmol ml<sup>-1</sup>) and (F) plasma TAS (total antioxidant status; mmol ml<sup>-1</sup>). White squares: control males; black squares: treated (dosed) males (purged of parasites). Numbers above error bars refer to sample size (number of males).

The following reference should also have been included in the Reference list:

Mougeot, F., Martínez-Padilla, J., Bortolotti, G. R., Webster, L. M. I. and Piertney, S. B. (2010). Physiological stress links parasites to carotenoid-based colour signals. *J. Evol. Biol.* **23**, 643–650.

The authors apologise for any inconvenience caused.