LETTER TO THE EDITOR

The B in 'BDM.' William Bateson did not advocate a genic speciation theory

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In his commentary 'One hundred years after Bateson,' Johnson (2009) refers to demonstrations of incompatibilities between the products of putative speciation genes that provide 'further proof of principle of the model proposed by Bateson (1909) and extended by Dobzhansky (1937), Muller (1942) and subsequent geneticists.' Such 'Bateson–Dobzhansky–Muller (BDM) incompatibilities' are held to 'form the basic paradigm for much of the current theory on the evolution of reproductive isolation, and therefore the formation of species.'

However, while citing Lewis (2009), Johnson does not mention that Lewis urges caution 'in labeling gene incompatibilities as speciation genes,' and 'in interpreting them as being causal in the speciation process rather than a result of divergence post-speciation.' Furthermore, while citing the yeast studies of Greig (2009), Johnson does not mention Greig's suggestion that speciation is simply due to 'sequence divergence,' which generates meiotic 'antirecombination,' namely 'the inability of diverged chromosomes to form crossovers' because of non-genic chromosomal incompatibilities. Likewise, from introgression studies in fruit fly, it was suggested that chromosomal incompatibilities were due to 'foreign DNA amount' and not due to its coding potential (Naviera and Maside, 1998). A classic speciation gene causing tumors in interspecies fish hybrids has been brought into question (Schartl, 2008).

As these studies support the non-genic view that William Bateson expounded in the early decades of the twentieth century (Forsdyke, 1999, 2001, 2006), your readers may find it strange that Bateson's name is linked to the genic viewpoint of Dobzhansky and Muller. It is true that theirs is a model of interaction between genes, and that Bateson introduced the term 'epistasis' to describe such interactions. But a careful contextual reading of Bateson shows that he attributed speciation to a non-genic 'residue' that can now be equated with divergence in DNA base compositions (Cock and Forsdyke, 2008; Forsdyke, 2009, 2010).

Conflict of interest

The author declares no conflict of interest.

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