Limiting genotype frequencies of Y-linked genes with a mutant allele through bisexual branching processes with blind choice

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Abstract. In [1], a two-sex bidimensional branching process is introduced to model the evolution of the number of carriers of an allele and its mutations for certain Y-linked gene. In such paper, the authors determine conditions for the extinction or survival of that allele and also prove that the destiny of the allele's mutations depends on the survival or extinction of the original allele. In this work we deal with the study of the limiting genotype growth rates and the limiting genotype frequencies of such allele and its mutations. Moreover, we illustrate the results by means of simulated examples.

This is a coauthored work with Alsmeyer, G., González, M. and Martínez, R.

Acknowledgements. The research was supported by the Ministerio de Economía y Competitividad, Junta de Extremadura and the FEDER through the grants MTM2012-31235 and GR10118.

References

[1] González, M., Gutiérrez, C. and Martínez, R. Extinction conditions for Y-linked mutant-alleles through two-sex branching processes with blind-mating structure. *Journal of Theoretical Biology* **307** (2012), 104–116.