Errata

A symbiotic physical niche in Drosophila melanogaster regulates stable association of a multi-species gut microbiota [1]

In the Supplementary Information, the x-axis labels of Figs. S5c,d should read: "geometric mean abundance once colonized $A(N_0)$ (CFUs)". The captions of Figs. S5c and S5d should read: "Each data point consists of a number of biological replicates, ranging from n=4 to n=28, and plots the geometric mean of nonzero abundances. X error bars are 95% confidence intervals of the geometric mean." We used the geometric mean, rather than the arithmetic mean, because abundances were approximate log-normally distributed.

The theoretical metapopulation argument schematized in Fig. S5a,b suggests that the number of colonized patches is binomally distributed with N_{enc} trials and probability p of success for each trial. Assuming exactly k individuals colonize a "successfully colonized" patch, the average number of individuals per fly will be kpN_{enc}. Since the average of the binomial distribution *includes cases in which no patches are colonized*, the empirically-measured abundance (LHS of Fig. S5b2) should be the abundance across all replicates. This argument gainsays our original approach of taking geometric means of the abundance of successfully colonized flies, and suggests instead taking the arithmetic mean and including replicates with zero abundance. This latter approach increases the inferred per-patch carrying capacity k by 40%, from ∼600 bacteria to ∼800 bacteria. While this slightly modifies the estimated subpopulation size of 600 cells provided in the main text, the findings and conclusions of the paper are unaffected.

A more detailed analysis (relaxing the assumption that exactly k bacteria colonize each patch, for example) is forthcoming in a standalone article. (*updated 8/15/23*)

References

[1] Ren Dodge, Eric W. Jones, Haolong Zhu, Benjamin Obadia, Daniel J. Martinez, Chenhui Wang, Andrés Aranda-Díaz, Kevin Aumiller, Zhexian Liu, Marco Voltolini, Eoin L. Brodie, Kerwyn Casey Huang, Jean M. Carlson, David A. Sivak, Allan C. Spradling, and William B. Ludington. A symbiotic physical niche in Drosophila melanogaster regulates stable association of a multi-species gut microbiota. *Nature Communications*, 14(1):1557, Mar 2023.