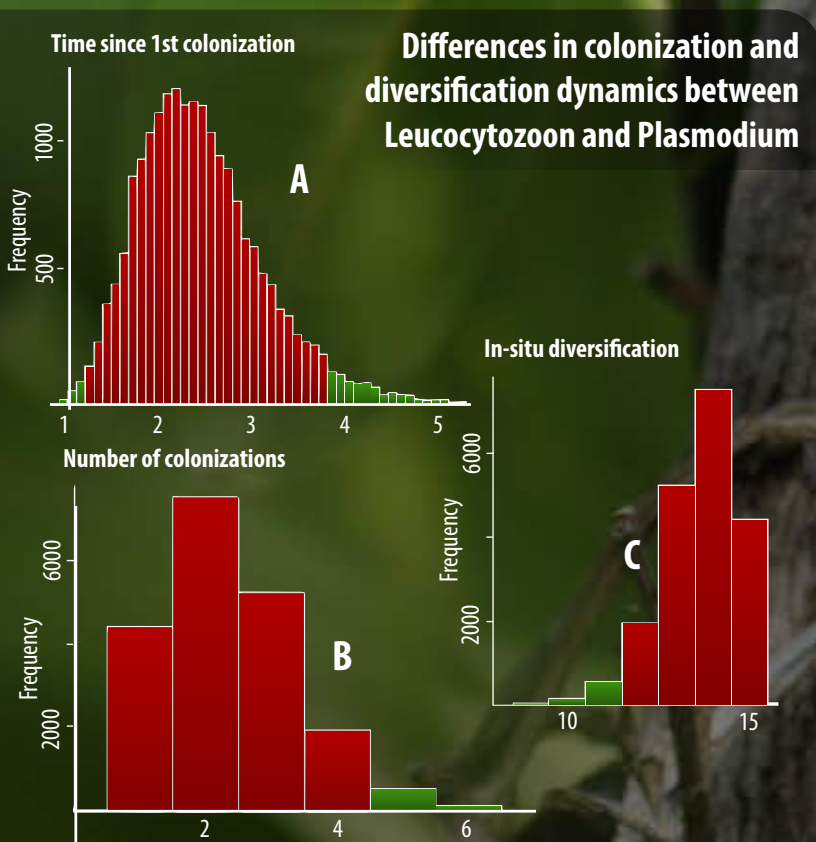


Timing and number of colonizations but not diversification rates affect diversity patterns in hemosporidian lineages on a remote oceanic archipelago



A: Estimation of the average colonization timing of Leucocytozoon relative to that of Plasmodium (Leucocytozoon arrived on average 2.6 times earlier than Plasmodium). **B:** Estimation of the difference in the number of colonizations between the two parasites (about 2 additional colonizations for Leucocytozoon). **C:** Estimation of the difference in the number of lineages that formed in-situ between the two parasites (Leucocytozoon produced 14 more lineages through in-situ speciation). Bar heights represent the probability of a range of estimates.

Parasite diversity on remote oceanic archipelagos is determined by the number and timing of colonizations, and in-situ diversification rate. In this study we compare intra-archipelago diversity of two hemosporidian parasite genera, Plasmodium and Leucocytozoon, infecting birds of the Mascarene archipelago. Despite the generally higher vagility of Plasmodium parasites, we report a much lower diversity of Plasmodium cytochrome-b haplotypes in the archipelago compared to Leucocytozoon. Using phylogenetic data, we find that this difference in diversity is consistent with differences in the timing and the number of colonizations, while rates of diversification do not vary significantly between the two genera. The prominence of immigration history in explaining current diversity patterns highlights the importance of historical contingencies in driving disparate biogeographic patterns in potentially harmful blood parasites infecting island birds.

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