Supporting Information

de Roode *et al.* 10.1073/pnas.0710909105

SI Text

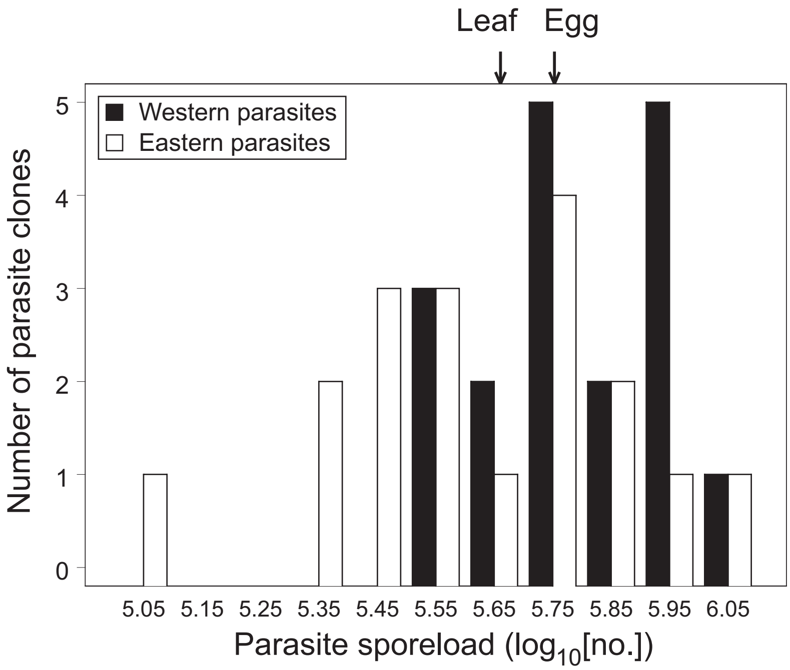

Fig. S1. Distribution of parasite replication rates. Replication rates are shown for parasite clones from the western and eastern monarch populations. For each parasite clone, replication rates were calculated separately for eastern and western monarch hosts, resulting in a total of 36 data points. Bars represent 0.1 $\log_{10}$ intervals and are labeled by their midpoint replication rate. Arrows denote the approximate replication rates predicted to maximize parasite fitness through spore deposition on leaves and eggs, respectively.

Table S1. Functional forms of the least-squares regression lines used to calculate parasite lifetime fitness measures $\omega_e(p)$ and $\omega_l(p)$, and estimates (±1 SE) of the parameters describing them (p_0, n, a, b, d_{e0}, and d_{l0})

Emergence probability, E	$E(p) = 1 - (p^n/(p^n + p_0^n))$	$n = 25.79 \pm 3.63$	$p_0 = 6.22 \pm 0.047$
Mating probability, M	$M(p) = 1 - (p^n/(p^n + p_0^n))$	$n = 21.91 \pm 15.14$	$p_0 = 6.13 \pm 0.26$
Proportion eggs with parasites, T	$T(p) = p^n/(p^n + p_0^n)$	$n = 15.45 \pm 3.22$	$p_0 = 5.27 \pm 0.091$
Average parasites per egg ($\log_{10}$[number]), d_e	$d_e(p) = a + bp$	$a = -2.63 \pm 0.55$	$b = 0.65 \pm 0.097$
Average parasites per leaf ($\log_{10}$[number]), d_l	$d_l(p) = a + bp$	$a = -4.77 \pm 1.31$	$b = 1.21 \pm 0.23$
Proportion monarchs infected on basis of eggs, I_e	$I(d_e) = d_e^n/(d_e^n + d_{e0}^n)$	$n = 2.29 \pm 0.56$	$d_{e0} = 1.51 \pm 0.18$
Proportion monarchs infected on basis of leaves, I_l	$I(d_l) = (d_l + 10)^n/((d_l + 10)^n + d_{l0}^n)$	$n = 34.5 \pm 8.17$	$d_{l0} = 10.2 \pm 0.11$

p refers to parasite spore load and d refers to dose. Subscripts *e* and *l* refer to parasite transmission through eggs and milkweed leaves, respectively. [Note that the Hill function for $I_l(d)$ is shifted to the right by 10 units to allow for $\log_{10}$(dose) < 0.]