

## Supplementary Material

**Table S1** Pairwise comparisons of inter-island genetic differentiation in the louse *Degeeriella regalis*. Data are based on 1099 bp of mtDNA sequences (partial COI and 12S) collected from 110 individual lice from 8 Galápagos hawk island populations. Pairwise  $F_{st}$  values estimated from Kimura 2-parameter genetic distances are below the diagonal and the  $P$  values of those comparisons are above the diagonal.

	<b>Fernandi na</b>	<b>Pinta</b>	<b>Marche na</b>	<b>Isabel a</b>	<b>Santia go</b>	<b>Pinzón</b>	<b>Españ ola</b>	<b>Santa Fe</b>
<b>Fernandi na</b>	-	<0.000 01	<0.0000 1	0.264	0.409	<0.000 01	<0.000 01	<0.000 01
<b>Pinta</b>	0.7718	-	<0.0000 1	<0.000 01	<0.000 01	<0.000 01	<0.000 01	<0.000 01
<b>Marchen a</b>	0.8889	0.8396	-	<0.000 01	<0.000 01	<0.000 01	<0.000 01	<0.000 01
<b>Isabela</b>	0.0200	0.7946	0.8887	-	0.072	<0.000 01	<0.000 01	<0.000 01
<b>Santiago</b>	0.0001	0.6860	0.7641	0.0272	-	<0.001	<0.000 01	<0.000 01
<b>Pinzón</b>	0.8282	0.8778	0.9669	0.8074	0.5354	-	<0.000 01	<0.001
<b>Española</b>	0.9670	0.9550	0.9874	0.9622	0.9064	1.0	-	<0.001
<b>Santa Fe</b>	0.9192	0.8808	0.8573	0.9180	0.8265	0.9724	0.9876	-

**Table S2** Pairwise comparisons of inter-island genetic differentiation in the louse *Colpocephalum turbinatum*. Data are based on 950 bp of mtDNA sequences (partial COI and 12S) collected from 127 individual lice from 8 Galápagos hawk island populations. Pairwise  $F_{st}$  values estimated from Kimura 2-parameter genetic distances are below the diagonal and the  $P$  values of those comparisons are above the diagonal.

	<b>Fernandi na</b>	<b>Pinta</b>	<b>Marche na</b>	<b>Isabel a</b>	<b>Santia go</b>	<b>Pinzón</b>	<b>Españ ola</b>	<b>Santa Fe</b>
<b>Fernandi na</b>	-	<0.000	<0.0000	0.279	<0.000	<0.01	<0.05	<0.000
<b>Pinta</b>	0.3895	-	<0.0000	<0.000	<0.000	<0.000	<0.000	<0.000
<b>Marchen a</b>	0.7953	0.9417	-	<0.000	<0.000	<0.000	<0.000	<0.000
<b>Isabela</b>	0.0286	0.5143	0.8128	-	<0.000	<0.01	<0.05	<0.000
<b>Santiago</b>	0.3785	0.8200	0.8734	0.4295	-	<0.01	0.108	<0.000
<b>Pinzón</b>	0.3387	0.8702	0.8061	0.3336	0.1946	-	0.0750	<0.001
<b>Española</b>	0.2606	0.9	0.8038	0.2541	0.1013	0.1447	-	<0.001
<b>Santa Fe</b>	0.6162	0.9	0.8955	0.6646	0.8462	0.7874	0.7948	-

**Table S3.** Pairwise comparisons of inter-island genetic differentiation in the lousefly *Icosta nigra*. Data are based on 937 bp of mtDNA sequences (partial COI and 12S) collected from 117 individual flies from 7 Galápagos hawk island populations. Pairwise  $F_{st}$  values estimated from Kimura 2-parameter genetic distances are below the diagonal and the  $P$  values of those comparisons are above the diagonal.

	<b>Fernandina</b>	<b>Pinta</b>	<b>Isabela</b>	<b>Santiago</b>	<b>Pinzón</b>	<b>Española</b>	<b>Santa Fe</b>
<b>Fernandina</b>	-	<0.00001	1	0.173	<0.00001	<0.00001	<0.00001
<b>Pinta</b>	1.0	-	<0.00001	<0.00001	0.092	0.216	0.260
<b>Isabela</b>	-0.0171	0.8830	-	0.160	<0.00001	<0.00001	<0.00001
<b>Santiago</b>	0.0953	0.7402	0.0353	-	<0.00001	<0.00001	<0.00001
<b>Pinzón</b>	0.7692	0.1624	0.6561	0.5089	-	0.1051	0.2770
<b>Española</b>	0.8571	0.0051	0.7585	0.6358	0.0072	-	0.4711
<b>Santa Fe</b>	0.9161	0.241	0.7878	0.6712	0.0874	0.0244	-





**Table S6** Mdiv estimates of the non-equilibrium migration rates ( $N_{ef}m$  below diagonals) and estimates of the divergence times (above diagonal) between population pairs of *Colpocephalum turbinatum* (divergence times were standardized by taking the product of  $\theta * t$ , where  $\theta = 2N_{ef}\mu$ ).

	<b>Fernandina</b>	<b>Marchena</b>	<b>Santiago</b>	<b>Isabela</b>	<b>Pinzón</b>	<b>Pinta</b>	<b>Santa Fe</b>	<b>Española</b>
<b>Fernandina</b>	-	3.24	0.69	0.11	0.71	0.23	1.78	0.77
<b>Marchena</b>	0.01	-	3.56	2.74	3.08	4.01	4.93	2.76
<b>Santiago</b>	0.17	0.01	-	0.64	0.05	0.84	2.39	0.39
<b>Isabela</b>	1.1	0.01	0.2	-	0.36	0.30	1.25	0.62
<b>Pinzón</b>	0.22	0.01	3.85	0.27	-	1.05	2.33	0.02
<b>Pinta</b>	0.02	0.01	0.01	0.08	0.01	-	0.91	0.73
<b>Santa Fe</b>	0.02	0.01	0.03	0.02	0.01	0.01	-	1.97
<b>Española</b>	0.17	0.01	1.09	0.42	4.99	0.02	0.02	-

**Table S7** Mdiv estimates of the non-equilibrium migration rates ( $N_{ef}m$  below diagonals) and estimates of the divergence times (above diagonal) between population pairs of *Icosta nigra* (divergence times were standardized by taking the product of  $\theta * t$ , where  $\theta = 2N_{ef}\mu$ ).

	<b>Fernandina</b>	<b>Santiago</b>	<b>Isabela</b>	<b>Pinzón</b>	<b>Pinta</b>	<b>Santa Fe</b>	<b>Española</b>
<b>Fernandina</b>	-	0.09	0.01	0.27	0.50	0.48	1.13
<b>Santiago</b>	0.3	-	0.01	1.05	0.38	0.42	1.84
<b>Isabela</b>	6.54	7.72	-	0.46	0.81	0.72	0.63
<b>Pinzón</b>	0.08	0.8	0.46	-	0.08	0.18	0.06
<b>Pinta</b>	0.01	0.09	0.11	0.4	-	0.13	0.02
<b>Santa Fe</b>	0.01	0.21	0.16	0.28	0.68	-	0.42
<b>Española</b>	0.09	0.34	0.28	4.75	3.67	9.8	-

