

HOST DEFENSE LIMITS HOST SWITCHING

Sarah Al-Tamimi & Dale H. Clayton

University of Utah, Department of Biology, 257 S. 1400 E. Salt Lake City, Utah 84112. USA

Host switching requires that a parasite successfully disperses to and establishes on a "foreign" host. Over macroevolutionary time, even permanent parasites like lice have opportunities to disperse to new hosts. Yet, host specificity is often maintained. What ecological circumstances limit the ability of parasites to establish on foreign hosts? A limited ability to escape from the defense of foreign hosts may prevent establishment. Wing lice on doves, *Columbicola* (Ischnocera), insert their entire bodies between the barbs of flight feathers to escape from preening, which is a bird's principle means of ectoparasite defense. A test of this escape behavior on foreign host feathers shows that insertion ability varies with host feather size. The role of host defense (preening) as a limit to host switching was explored experimentally by transferring *Columbicola* to several different sized dove species. The fitness of lice transferred to foreign host species were measured relative to the fitness of control lice back-transferred to the normal host.