

SEASONALITY IN COCCIDIAN PARASITISM AND IMMUNE FUNCTION IN THE HOUSE SPARROW: NATURAL COVARIATION OR JUST COINCIDENCE?

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Seasonality in immune functions of wild-living animals is increasingly recognized as an adaptation to changing environmental conditions, reflecting the actual constraints between an effective defence against periodically emerging diseases and the sex specific cost of maintaining an effective immune function. Studies on birds indicate that the seasonal variation in immune function is the rule rather than the exception, however, studies on seasonality of immune investment are contradictory. There are several reasons that may account for the seasonality of immune function, but a significant role has been attributed to differential selection exerted on males and females by the seasonally emerging parasites seems to be important. According to this, the “parasite exposure” hypothesis predicts that immunocompetence should increase during the breeding season in temperate birds, when the risk of infection is high. We tested this hypothesis by monitoring the intensity of coccidian infestation in male and female house sparrows during a whole annual cycle. Concurrently, we measured the immunological response of the infested and control (deparasitized) birds. The difference in response, measured through various immunological variables characterizing primarily the constitutive immune function, between experimental groups of males and females are discussed in light of our current knowledge on the adaptive response of sedentary birds to the seasonally changing parasite pressure.

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