Conspecific brood parasitism in Red-breasted Mergansers: parasite behaviour, fitness costs, and host response

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Conspecific brood parasitism (CBP) is an intriguing avian reproductive tactic in which a female (the parasite) lays at least some eggs in the nest of an individual (host) of the same species. Nonetheless, the adaptative significance of CBP across ecological contexts in which the behaviour occurs is not fully understood. Over the last 10 years, we've combined field observations and experiments with molecular analyses to explore the role of CBP in the nesting biology of Red-breasted Mergansers (*Mergus serrator*) breeding colonially on a coastal archipelago in NB. Notably, we assessed (i) cues used by parasites for selecting host nests, (ii) costs of CBP to host fitness, and (iii) whether hosts respond to brood parasitism. Results revealed that brood parasites may rely on correlates of host presence, but not of nest-site safety or host quality, as cues for selecting nests to parasitize. Parasitic eggs were almost always laid during the host laying cycle, which would have helped ensure that these eggs were incubated to full term. CBP did not affect the length of the incubation period or host survival, however, hatching success declined with greater magnitude of brood parasitism. We used protein fingerprinting to identify sources of eggs from a sample of nests, and results demonstrated that hosts do not purposefully reject parasitic eggs. Overall, this study suggests that CBP is an effective way for Red-breasted Mergansers to gain fitness without providing parental care, and it has generated hypotheses attempting to explain why hosts accept potentially costly parasitic eggs.

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