

The enigma of imperfect adaptations in hosts of avian brood parasites

Bård G. Stokke, Arne Moksnes and Eivin Røskaft

Department of Biology, Norwegian University of Science and Technology, NTNU, N-7491

Trondheim, Norway

Coevolutionary dynamics allow revealing ongoing microevolutionary processes and adaptations. Interactions between obligate avian brood parasites and their hosts are suitable systems for the study of coevolution. This fascinating subject has interested both scientists and the common man for decades, but there are still many unanswered questions. One of the main puzzles is the imperfect rejection behaviour towards parasite eggs among hosts of brood parasites. Thus, many hosts experience severe costs of parasitism, which dramatically reduce their fitness. In order to lower these costs, hosts are expected to evolve countermeasures against parasitism. However, many host species show no rejection or only intermediate rejection rates against non-mimetic parasitic eggs. In this review we consider several hypotheses set out to explain this phenomenon, and then we link these hypotheses with a consideration of various sources that can influence decision-making when hosts are faced with the possibility that a parasitic egg is present in their nest.