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Abstracts

FEATURE ARTICLES

EGG MASS INFLUENCES NESTLING QUALITY IN TREE SWALLOWS, BUT THERE IS NO DIFFERENTIAL ALLOCATION IN RELATION TO LAYING ORDER OR SEX

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Abstract. Maternal allocation of resources to eggs and nestlings can potentially have a profound influence on offspring phenotype and fitness. However, it is often unclear how much of the variation in offspring quality is due to maternal or environmental effects. We examined the influence of maternal and environmental effects on egg mass and nestling quality (growth and immune function) in Tree Swallows (*Tachycineta bicolor*). There was no evidence that the allocation of maternal resources to eggs varied with laying order or offspring sex. Thus, there was no evidence of adaptive maternal allocation to eggs in terms of mass. Instead, egg mass in Tree Swallows appeared to be influenced primarily by ambient temperature during egg formation and differences among females. Nonetheless, female Tree Swallows were likely to realize substantial benefits from producing larger eggs because those young were larger at hatching and grew faster. Furthermore, nestlings that grew faster had a stronger immune function at 11 days of age. Our results suggest that the positive relationship between nestling growth and survival may be due, in part, to the effects of an enhanced immune response.

Key words: ambient temperature, egg mass, immune function, maternal effects, nestling growth, offspring sex, *Tachycineta bicolor*.