

Publication**Benefits and costs of earwig (*Forficula auricularia*) family life****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 89171**Author(s)** Kölliker, M.**Author(s) at UniBasel** [Kölliker, Mathias](#) ;**Year** 2007**Title** Benefits and costs of earwig (*Forficula auricularia*) family life**Journal** Behavioral ecology and sociobiology**Volume** 61**Number** 9**Pages / Article-Number** 1489-1497**Keywords** sociality, parental care, clutch size, *Forficula auricularia*, life history trade-off

The evolution of parental care and family group formation critically depends on offspring survival benefits and parental fecundity costs of care under given ecological conditions. Investigations of the functional significance of care in insect species that exhibit facultative parental care have been relatively rare but may be of particular interest for better understanding of benefit and cost schedules at an early evolutionary stage. In this study, aspects of benefits and costs of care were addressed in the sub-social European earwig (*Forficula auricularia*; Dermaptera: Forficulidae) by manipulating the presence of tending mothers and brood size in a fully crossed experimental design. Larvae growing in broods tended by their mother or of reduced size showed a higher survival probability than larvae growing in untended or large broods, as predicted if maternal care is beneficial and shaped by a trade-off between number and quality of offspring. Analysis of patterns of food consumption and developmental time further suggested that the benefit of maternal attendance is mediated by the maternal provisioning of food, while the quality-quantity trade-off seemed to be driven by sibling rivalry. Further, tending mothers delayed the production of a second clutch, indicating a potential cost of care in terms of lifetime fecundity. This study experimentally shows benefits and potential costs of maternal care and family group formation in the European earwig. More detailed behavioural experiments will be required to fully understand how behavioural interactions among family members mediate these reproductive outcomes.

Publisher Springer**ISSN/ISBN** 0340-5443**edoc-URL** <http://edoc.unibas.ch/dok/A5251431>**Full Text on edoc** Available;**Digital Object Identifier DOI** 10.1007/s00265-007-0381-7**ISI-Number** WOS:000247256000018**Document type (ISI)** Article