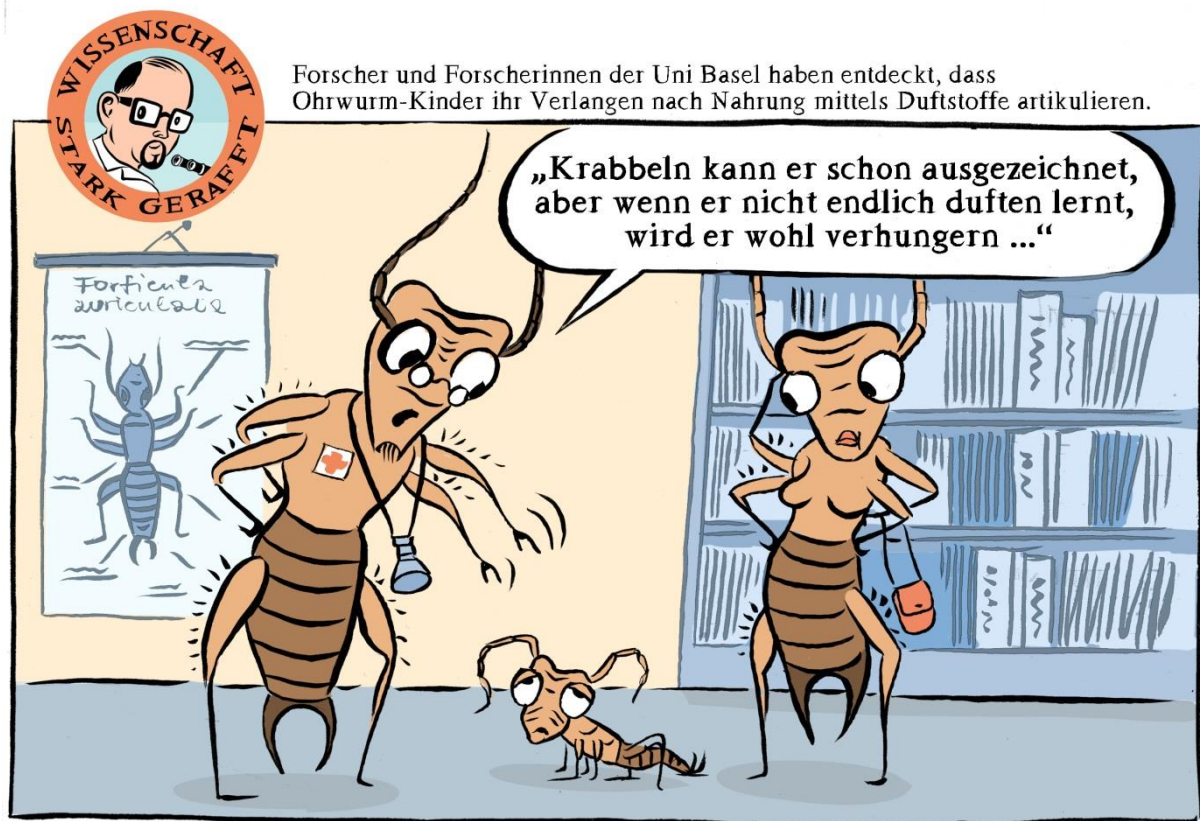


## Beispiel Cartoon (ohne Begleittext): Mutter-Kind Kommunikation in Ohrwürmern<sup>3</sup>

*In diesem Beispiel wird Kooperation zwischen den Eltern und den Nachkommen illustriert. Bei Arten, die – wie etwa die Ohrwürmer – eine Brutpflege kennen, ist Kooperation ein fundamentaler Aspekt. Allerdings sind Konflikte unvermeidbar: Während Nachkommen von der intensiven Pflege profitieren, führt dies bei Eltern zu erhöhten Kosten, zu deren Übernahme sie nicht immer bereit sind.*



<sup>3</sup> Mas, F., K. F. Haynes, et al. (2009). "A chemical signal of offspring quality affects maternal care in a social insect." *Proceedings of the Royal Society B-Biological Sciences* **276**(1668): 2847-2853.

## Earwigs

*The research group of Mathias Kölliker of the University of Basel found out that earwig offspring can ask for food by producing scents.*

**“His crawling is outstanding, but if he does not learn how to smell, he will starve...”**

Researchers from the group of Mathias Kölliker at the University of Basel, Switzerland, showed that insect offspring communicate with their mother by pheromone signals. These pheromones depend on the nutritional condition of the young: they produce more of certain chemical compounds (cuticular hydrocarbons) when in good condition, and the mothers respond to these pheromones by providing more care. Thus it seems necessary to produce a certain amount of these compounds to elicit maternal care, which is only achieved by young in good condition. The experiments were carried out in the European earwig (*Forficula auricularia*), an insect species where females provide care including the provisioning of food to her 20-90 young. The species is considered a model to study the early evolutionary conditions under which parental care and family live originally evolved. The presumable reason why earwig mothers intensify care for high quality offspring rather than needy ones is that it pays off evolutionarily to invest in high quality offspring when on average each young has very low chances to survive and reach adulthood.