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Neglected aspects of hormone mediated maternal effects

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Propositions

accompanying the thesis

“Neglected aspects of hormone mediated maternal effects”

by Neeraj Kumar

1. The findings from radioimmunoassay-based experimental manipulation of egg hormones and their eco-evolutionary interpretations are unreliable. (chapter 2)
2. The egg hormones are metabolized in a laying order dependent manner already during maturation of the egg in the mother’s oviduct. Therefore, the findings (and their eco-evolutionary interpretations) from calibration of egg hormone injection dose based on their levels found at oviposition, even when accurately determined by LC-MS/MS, require validation. (chapter 3)
3. Uptake of maternal egg yolk hormones to the embryonic circulation or body tissues in the same chemical form as deposited by the mother may not be necessary to exert their effects on the embryo. (chapter 6)
4. The idea that the mother, by allocating different amounts of hormones to different eggs, has the upperhand in hormone mediated parent-offspring conflict is merely an assumption. (this thesis)
5. There is not sufficient integration of proximate and ultimate approaches in the field of hormone mediated maternal effects, including the role of the embryo in translating maternal hormonal signals to their phenotypic effects. (this thesis in combination with Groothuis et al. (2019) Phil. Trans. R. Soc. B. 374: 20180115)
6. Parental effects were once seen as a nuisance in genetics studies, but later turned out to be intriguing biological phenomena. Likewise, placebo effects have been inappropriately regarded as a nuisance in clinical research until recently and deserve more elaborate mechanistic examination.
7. The incorporation of endocrinology in behavioural and ecological research exemplifies the difficulty and risk of integration of a discipline by non-specialists in interdisciplinary research.