



Brood reduction, embryo homogenization and the “women in red” effect: new perspectives in pipefish male pregnancy

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Life history theory predicts that investment in reproduction should mirror the expected fitness benefits. Thus, it seems reasonable to expect that both sexes should be capable of modulating investment in reproduction according to mate attractiveness, either prior or even after fertilization. Although several post-copulatory sexual selection mechanisms acting during embryonic development have already been described in viviparous species, these are currently restricted to female pregnancy. In the family Syngnathidae pregnancy occurs in the male, a fact that makes this fish group into a unique model to assess undescribed post-copulatory sexual selection mechanisms. Knowing that most pipefish males prefer larger partners, nourish the embryos during pregnancy and abort eggs from less preferred females (the latter in a predominantly polyandrous species), how would males optimize investment during pregnancy in polygynandrous species? We found that, in *Syngnathus abaster*, both brood size and embryo length variability are reduced from the beginning to the end of pregnancy. This strongly indicates an active role of the male in this process. Additionally, we show that an analogue of the “Bruce effect”, never described in non-mammals, also occurs in pregnant males. When presented with an unfamiliar “sexier” female (the “Women in red” effect), males produce less homogenous broods while giving birth to smaller than expected embryos.

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