

Publication**Determinants of female and male reproductive success in a simultaneous hermaphrodite land snail****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 986130**Author(s)** Minoretti, Nicole; Schmera, Denes; Kupfernagel, Sandra; Zschokke, Samuel; Armbruster, Georg F. J.; Beese, Kathleen; Baur, Anette; Baur, Bruno**Author(s) at UniBasel** [Schmera, Dénes](#) ; [Zschokke, Samuel](#) ; [Armbruster, Georg](#) ; [Baur, Anette](#) ; [Kupfernagel, Sandra](#) ;**Year** 2011**Title** Determinants of female and male reproductive success in a simultaneous hermaphrodite land snail**Journal** Animal behaviour**Volume** 82**Number** 4**Pages / Article-Number** 707-715**Keywords** Arianta arbustorum, gastropod, mating success, multiple mating, paternity, reproductive success, sex allocation, simultaneous hermaphrodite

Classical sexual selection theory assumes that the reproductive success of females is limited by the resources available for egg production, while the reproductive success of males is determined by the number of mates (Bateman's principle). It has been suggested that the optimal mating rates should also diverge between gender functions within individuals of simultaneous hermaphrodites. We assessed determinants of mating success and female and male reproductive success in individuals of the simultaneous hermaphrodite land snail *Arianta arbustorum*. We videorecorded the behaviour of individually tagged snails kept in groups of six animals over one reproductive period (58 days) and assigned the genotyped hatchlings to the female and male function of individual parents. We found considerable interindividual variation in the activity of snails, which is a combined measure of time spent crawling, feeding and digging. The snails mated between zero and three times. Mating success, which is equal to the female and male function in simultaneous hermaphrodites with reciprocal copulation, was mainly determined by the activity of an individual. We found that female reproductive success (number of hatchlings emerging from the eggs laid by the focal snail) was positively correlated with male reproductive success (number of hatchlings sired by the focal snail) and that both were determined by the individual's activity. Furthermore, both female and male reproductive success of an individual were influenced positively by the snail's degree of genetic heterozygosity and negatively by shell size. Our results challenge the trade-off assumption of sex allocation theory in simultaneous hermaphrodites.

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