Evidence for a third male type in a male dimorphic model species. Kathryn A. Stewart, Tom P. G. Van den Beuken, Flor T. Rhebergen, Jacques A. Deere, and Isabel M. Smallegange. Ecology. 2018.

Appendix S1

Methodology

Morphometric measurements

Males were randomly selected from the 1992 and 2010 stock populations and scored as fighter or non-fighter (combining scramblers and mega-scramblers). In addition, relatively large non-fighters, the putative mega-scramblers, were searched for by eye and were classified as non-fighters as well. All 1992 males were photographed using a Lumenera Infinity 3.1 camera connected to a Zenith SRZ-4500 (7-45x) stereomicroscope. Subsequently we used Infinity Analyze Imaging Software to measure to the nearest 0.1 µm (i) body length (excluding mouthparts) and (ii) the width of the basal part of the trochanter of the third leg. The 2010 males were photographed using a Zeiss Axiocam 105 color camera on a Zeiss Stemi 2000-C (0.5-15x) microscope. The photographs were measured using the Zen 2.3 (Blue edition) software. We conducted all analyses on log-transformed measurements.

Morphometric analysis

Fighter males can be identified by eye by the presence of their fighter legs. We determined male morph within all non-fighters by fitting a switch-point regression between log body length and log leg width using the *segmented* package in R (R Development Core Team, 2013) (Knell 2009). For the 1992 population, this regression gave a break point at a log body length of 6.513 (standard error = 0.034), equaling a body length of 674.8 µm (Fig. 1B). This means that males within the 1992 population with a body length greater than or equal to this switch-point of 674.8 µm can be classified as mega-scramblers, the remaining males can be classified as scramblers. For the 2010 population, this regression gave a switch point at log body length of 6.267 (standard error = 0.051), equaling a body length of 526.9 µm (Fig. 1B). Again, males with a body length greater than or equal to this break point can be classified as mega-scramblers, and the remaining males as scramblers.

Literature Cited
Knell, R. J. 2009. On the analysis of non-linear allometries. Ecological Entomology 34: 1-11.
R Development Core Team. 2013. R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria.