

Integrative taxonomy versus taxonomic authority without peer review: the case of the Oriental fruit fly, *Bactrocera dorsalis* (Tephritidae)

ABSTRACT

1. Major global horticultural and food security tephritid fruit fly pests, *Bactrocera papayae* (papaya fruit fly) and *B. invadens* (invasive fruit fly), were synonymised with *B. dorsalis* (Oriental fruit fly) by Schutze et al. (2015a) based on extensive integrative taxonomic evidence from multiple sources. This synonymy was peer reviewed by eight independent experts. 2. Drew & Romig (2016) withdrew *B. papayae* and *B. invadens* from synonymy based on opinion drawn primarily from disparate geographical distribution, morphological, and host use information. This reversal was not subjected to peer review. 3. We consider the withdrawal from synonymy as invalid due to significant errors and misrepresentations of the literature provided in the arguments of Drew & Romig (2016) that we propose would not have withstood peer scrutiny. 4. This case reflects a broader issue of individual taxonomic authorities using opinion to challenge extensive evidence generated via scientific hypothesis-testing methods by discipline specialists. 5. We recommend that taxonomic acts not subjected to peer review, especially of pest species, be actively discouraged by the broader scientific and regulatory community.

Keyword: Integrative taxonomy; Taxonomic authority; Peer review; Oriental fruit fly; *Bactrocera dorsalis*; Tephritidae