

Published in 2021, *Hamuli***12(1)**: 14.

Please let's use the term *host repertoire* in place of *host range* for parasitoids.

Mark. R. Shaw, National Museums of Scotland, Edinburgh EH1 1JF, U.K.

In the context of reviewing possible effects of environmental change on insect–plant interactions, Braga and Janz (2021) suggested the use of “host repertoire” in place of “host range”. This resonated so strongly with me for host–parasitoid interactions that I am quite annoyed that I hadn't proposed it in any of the things I have written on host associations myself, including on concepts of speciation (e.g. Shaw 1994, 2003, 2017)! However, it is never too late to fall in line, and I strongly commend the terminology “host repertoire” now.

Seeing the “host range” of a parasitoid as a repertoire of potential hosts should help us to address the concept as something that can accrue. Just as a concert pianist can (with a bit of effort) add a piece to his/her repertoire, so a parasitoid can recruit a new host – at first by locally adapting to it at population level (not least physiologically in the case of koinobionts, probably following initially largely unsuccessful ovipositions), then potentially throughout the species (given the necessary conditions of gene flow). Further, established concepts such as “realised host range”, allowing for local differences and, especially, the absence of some potential hosts of a parasitoid from some locations where the parasitoid occurs, flow more easily from the idea of “repertoire”. (If our concert pianist can also play the flute but there isn't one to hand, and all that...). Particularly usefully – and I pin a lot of hope on this for the sake of my blood-pressure – perhaps by thinking in terms of “repertoire” people will more easily be able to refrain from saying that a parasitoid has “switched” host, when they really mean that it has recruited a new host; initially adding to its repertoire. Whether or not the ecological/environmental opportunity then arises for a new species to result, specialising on the new host (which I believe to be a major driver of speciation, at least for koinobionts), the first stage will have been simply to add that host to the existing repertoire, not to switch completely from one set of hosts to another in the fashion of changing one's car or energy supplier.

I am sure we can gain a lot from thinking of the interactions between Hymenoptera and their hosts (and no doubt host plants, prey etc. for the non-parasitoid groups) through this more dynamically expressive term. As with much of what we say and think, adopting suitable terminology to match the concept is a good first step to take.

References

- Braga, M. P. & Janz, N. (2021). Host repertoires and changing insect–plant interactions. *Ecological Entomology* (Online.) DOI: 10.1111/een.13073.
- Shaw, M. R. (1994). Parasitoid host ranges. In Hawkins, B. A. & Sheehan, W. (eds) *Parasitoid community ecology*: 111–144. Oxford University Press.
- Shaw, M. R. (2003). Host ranges of *Aleiodes* species (Hymenoptera: Braconidae), and an evolutionary hypothesis. In Melika, G. & Thuroczy, C. (eds) *Parasitic wasps: evolution, systematics, biodiversity and biological control*: 321–327. Agroinform, Budapest.
- Shaw, M. R. (2017). Anatomy, reach and classification of the parasitoid complex of a common British moth, *Anthophilafabriciana* (L.) (Choreutidae). *Journal of Natural History* **51(19–20)**: 1119–1149. DOI: 10.1080/00222933.2017.1315837.