



The lifestyle of a spider mite in psyllid galls: only parasitic?*

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Insect and mite galls provide a secondary habitat for arthropods and are sites driving community diversity. Nevertheless, the role of galls on the lifestyle of mites inhabiting them is scarcely investigated. We previously reported that a population of *Eotetranychus asiaticus* Ehara colonises leaf galls made by the psyllid *Trioza cinnamomi* (Boselli) larvae on Japanese cinnamon *Cinnamomum yabunikkei* H. Ohba (Lauraceae) (Saito *et al.*, 2016). Individuals constructed silk webs in the galls, and their lifestyle was considered specialised for using them. Here I surveyed the distribution of *E. asiaticus* populations in Kochi prefecture and found that mites and psyllid distribution range frequently overlapped. I also investigated the morphology, behaviours, overwintering, and the seasonality of host plants and psyllids in a population on *C. yabunikkei*. Some of these items were remarkably different from those of a population on *Ternstroemia gymnanthera* (Wight & Arn.) Sprague (Ternstroemiaceae), which is a common host plant of *E. asiaticus* (Ehara, 2009). These results suggest that this population has a lifestyle strongly dependent on the psyllid life cycle, and is genetically differentiated from other populations. Based on the results, we discuss the possible interaction between mites and psyllids and whether these relationships are parasitic or symbiotic.

Keywords: gall, host race, mite-psyllid interaction, parasitism, symbiosis

References

- Ehara, S. (2009) Revision of the spider mite family Tetranychidae of Japan (Acari, Prostigmata). *Species Diversity*, 4, 63–141. <https://doi.org/10.12782/specdiv.4.63>
- Saito Y., Lin, J.-Z., Zhang, Y.-X., Ito, K., Liu, Q.-Y. & Chittenden, A.R. (2016) Two new species and four new life types in Tetranychidae. *Annals of the Entomological Society of America*, 109, 463–472. <https://doi.org/10.1093/aesa/sav158>