* Origin of parthenogenesis is polyphyletic both in invertebrates and vertebrates, suggesting sexual systems are labile and prone to becoming parthenogenetic.
* Spontaneous loss of sexuality can occur through mutations or intra-/interspecific hybridization. It can also result from infection by a bacterial endoymbiont.
* Thelytoky can be caused by endosymbiont, or the insect itself.
* Phylogenetic incongruences between host and endosymbiont histories strongly indcate horizontal transmission event.
* Effective transmission of endosymbiont depends on intimate ecological associations which provide within-community horizontal transmission opportunities and on the phylogenetic similarity of donor and recipient host species because internal defense mechanisms are more likely to be similar.
* Low prevalence of thelytoky among Megastigmus species(15%)
* Thelytokous species occur sporadically on the Megastigmus tree.
* Transitions from one mode of reproduction to the other have regularly occurred during the evolutionary history of Megastigmus.
* Wolbachia was found to be fixed in all thelytokous Megastigmus species tested.
  + 1: MLST in many Wolbachia strains
    - 4 loci used
  + 2: Test congruence between trees constructed with different loci
    - 1 locus showed incongruence, analysis showed a recombination event between 2 strains.
  + 3: build tree with only 1 gene for Megastigmus species, but use 2 methods
    - Allows to detect artifacts. Gene used is COI, well conserved.
  + 4: Test congruence between 2 methods.
    - no incongruence
  + 5: Associate Wolbachia-Megastigmus tree and look for difference in phylogenies.
    - Allows to detect horizontal transfer of Wolbachia.
* Making sure the association between plant families and wolbachia infection is not random by checking all scenarios in the distribution of Wolbachia infected strains and calculating the proportion of scenarios where a wolbachia strain is specific to a plant family.
* First documented case of thelytoky in phytophagous chalcids.
* Transition from arrhenotoky to thelyoky is possible, but the reverse is much harder and even impossible after sexual traits have decayed.
* No statistical proof for an association between *Wolbachia* and host (*Megastigmus spp*) lineages.
* Thelytoky has spread across *Megastigmus* species through horizontal transmissions of *Wolbachia*. These transmissions occurred preferentially between species exploiting similar host plants, likely because of ecologically mediated pathways such as host-parasitoid associations or shared feeding/breeding sites.
* 2 filters for *Wolbachia* infection: encounter (contact between donor and recipient species) filter and compatibility filter (immune system relatedness between donor and recipient).
* There can be many eggs in a single seed, but only 1 larva can develop. It is supposed that *Wolbachia* can be transmitted by cannibalism when larvae are competing for seed material.