Fig wasps associated with an invasive fig tree: which is most damaging?

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Widespread introduction of its pollinator has allowed *Ficus microcarpa* (Moraceae) to become the most invasive fig tree species. We have surveyed its associated fig wasps in around 15 countries in both its native and introduced ranges (about 30 species in total), assessing their trophic relationships and impacts on pollinator and seed production. One fig wasp stands out as being particularly damaging to its host, namely an ovule galler that eliminates both components of plant reproduction in the figs it occupies. So far it is only known from Greece, outside of its native range in China.

Biocontrol and mycological discoveries: what we found on *Schinus terebinthifolius* in Brazil

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Brazilian pepper tree (BP), *Schinus terebinthifolius* (Anacardiaceae), is a small tree or shrub that, although regarded as useful and not invasive in its native Brazil, is a major invasive in the USA (Florida, Hawaii), Australia and numerous other regions where it was introduced. Conventional methods of control are widely regarded as costly and ineffective and biocontrol is the sole sustainable alternative for its management. The use of insects as potential biocontrol agents of BP have been exploited for several decades but have failed to control the weed infestations. Fungal pathogens of BP have been surveyed in Brazil during the last ten years and a diversity of fungi has been obtained. These taxa of fungi were associated with the following disease symptoms: anthracnose (*Colletotrichum* (Sordariales)); black mildews (*Meliola* – two species, and *Irenopsis* (both Meliolales)); dieback/wilt (*Claviradulomyces* (Ostropales), *Cylindrocarpon* (Hypocreales), *Pleomassaria* (Pleosporales), *Rhyzoctonia* (Cantharellales)); foliage and stem blight (*Corynespora cassiicola* f. sp. *schinii* (Pleosporales)); leaf spot (*Haynesia*, *Phomopsis* (Diaporthales), *Phyllosticta* (Botryosphaeriales), *Pseudocercospora* (Capnodiales) – three species, *Septoria* (Capnodiales), Coelomycete – gen. nov.); and powdery mildew (*Oidium* (Erysiphales)). A total of 18 fungal taxa were collected but it is likely that many others still await discovery since BP is broadly distributed in Brazil and interesting fungal novelties are still emerging even at well-surveyed places (for example, *Claviradulomyces* (Ostropales) sp. nov. was found in Dec 2013). Preliminary host-range evaluations were performed for *Septoria* species and *C. cassiicola* and have indicated an adequate level of host-specificity for both taxa. Although a later evaluation seemed to indicate that *Septoria* species is capable of attacking a native plant *Rhus michauxii* (Anacardiaceae) in the USA, this result requires confirmation. The study of the mycobiota of BP is a good example of a successful combination of the practical search for novel biocontrol agents and the description of fungal biodiversity in Brazil.

Pathogenic fungi collected on *Dolichandra ungüis-cati* (cat's claw creeper) in Brazil and Paraguay with comments on their biocontrol potential

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Cat's claw creeper, *Dolichandra unguis-cati* (Bignoniaceae), is a vine native to the Neotropics that has become an important weed in native forests in Australia, China, South Africa and the USA, among other regions of the globe where it has been introduced. It is regarded as a major threat to biodiversity and there is consensus that the sole sustainable method of control is through classical biocontrol. Several insect natural enemies collected in the native range of cat's claw have been studied in detail and some have been introduced into Australia. Nevertheless little attention has been given to fungi as potential biocontrol agents. Two rounds of surveys have been performed in recent years in areas of natural occurrence of cat's claw in Brazil and Paraguay yielding a significant diversity of fungal pathogens: five of these have been identified and their taxonomy elucidated in a recent publication. Later collections have brought to attention an additional 19 fungal taxa. The pathogens cause the following disease symptoms: (a) leaf spots (*Alternaria* (Pleosporales), *Cercospora* (Capnodiales) – two species; *Guignardia mangiferae*