Lasius niger (L.) ants invade the web of an agelenid spider

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ABSTRACT
Black garden ants Lasius niger (L.) were observed to invade a web of an agelenid funnel spider (Agelena labyrinthica Clerck or Allagelena gracilens C. L. Koch) and to take the entangled prey away, probably after driving the resident spider out of the web. The observation adds to a few examples of ants invading spider webs and suggests complex interactions between ants and funnel spiders which are known to feed on rather than being ousted by ants.

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Ants are known to invade spider webs to forage on spider’s catch or to prey on resident spiders. The ant invaders have so far been observed on the webs of velvet spiders (Er- esidae) (Henschel 1998, Leborgne et al. 2011), funnel spiders (Agelenidae) (Furey and Riechert 1989) and tangle-web spiders (Theridiidae) (Fowler and Venticinque 1996), all of which build 3D webs that are not recycled every 1–2 days as are typical orb webs (Foelix 2011) and thus remain susceptible to weathering which may facilitate the invasion by ants. The velvet spiders belong to a group of the so-called cribellate forms which, besides ordinate silk spinning organs, have the cribellum – a sieve-like structure which gives silk a fine woolly texture, adhesive without any glue. On the other hand, the catching threads of ecribellate (with no cribellum) funnel spiders and tangle-web spiders are covered with gluey secretion (Eberhard 1990, Foelix 2011). It is assumed that invading ants walk on non-sticky threads only but the behaviour of ants on spider webs does not seem to have ever been studied in detail. Ants generally stay away from typical 2D orb webs with the densely meshed catching spiral studded with glue droplets. In addition, a pyrrolidine alkaloid that provides protection from an ant invasion has been discovered in Golden orb web spiders Nephila antipodiana Walckenaer (Zhang et al. 2012).

Here we report for the first time the case of ants invading the web of the European agelenid funnel spider. It was Agelena labyrinthica Clerck which places large webs near the ground in dense vegetation, or Allagelena gracilens C. L. Koch which is considered to be less common and places its webs in higher vegetation, mostly in dense bushes (Nentwig et al. 2015). The 3D webs of these spiders are made of the funnel or a silken tube which serves as a retreat that is open on both ends, a dense, partly opaque bottom mat that is more or less sticky, and the transparent (barely visible) labyrinth of loose vertical and oblique threads that suspend the bottom mat.