

## **THE ROLES OF THE ANT CUTICULE: PROTECTION AGAINST DESSICATION, NESTMATE RECOGNITION, TRAP FOR POLLUTANTS**

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I will present my recent work and make a review on the role of the ant's cuticle. It is first like all other arthropods a barrier against desiccation due to the lipids of the cuticle. I will show that ants are differently protected according to the quality and quantity of these lipids. In social insects like ants, cuticular hydrocarbons have gained a role in communication. They enable species recognition, as the profiles are very different. It appears that some species have two or more chemotypes but cannot be differentiated morphologically; they are cryptic species. They are also responsible of nestmate recognition as intruders are rejected. Inside the colony the profile changes according the age, the caste. Cheaters like parasites or myrmecophiles can mimic the identity of their host to introduce into the host colony. The cuticle is also a trap for some lipophilic pollutants like phthalates, used to make the plastic less rigid. We showed that phthalates reduce the egg laying of the queens, they induce a stress response and are adsorbed through the cuticle. We found phthalates on the ant's cuticle in urbanized places due to presence of great quantities of plastics but also everywhere including the rain forest in Amazonia but in smaller quantities. They are transported in the atmosphere. Ants are a good indicator of phthalate pollution.

