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LEEC
Laboratoire d'Ethologie Expérimentale et Comparée
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Harvest-ironmen: heavy armor, and not defensive secretions, protect harvestmen (Arachnida, Opiliones) from spider attack

Rodrigo Hirata Willemart
Laboratory of Sensory Ecology and Behavior of Arthropods, School of Arts, Sciences and Humanities, University of São Paulo

Harvestmen are arachnids known to defend themselves by releasing secretions from scent glands that open dorso-laterally. Historically, studies in this area typically describe the secretions chemically, how the secretions are released upon manipulation with tweezers and the effect of the secretion on predators, mainly ants. However, very few studies used the actual harvestmen (as opposed to the secretions alone) against their potential predators. We have conducted several behavioral observations and experiments with two harvestmen species in the family Gonyleptidae and four spiders: two large species in the same family of the armed spider (Ctenidae), the spitting spider and the brown recluse spider. We found, to our surprise, that secretions are very rarely used but that the harvestmen are rejected by three of these species. We therefore tested the hypothesis that the thick integument provides protection against predators. We conducted a number of behavioral experiments and made descriptive observations pairing these same species. Our results suggest that a heavy protective armor has evolved in the class Arachnida, just as in beetles, turtles or pangolins.