Cyrtophora citricola is an iconic colonial spider, with a distribution from East Africa and West Africa to the Mediterranean and as far as India. Recently it has also reached the Americas. Its individual web contains a tightly woven sheet with vertical threads attached to it, forming a tent shaped orb web. In evolutionary terms, this is a new form, and a very complex one that takes the spider a long time to build. The three-dimensional prey-capture webs are stacked one on top of the other much like flats in an apartment block.

Each web has a single owner and the individual webs are connected to one another by frame threads. Up to a few thousand spiders can inhabit a single tree, covering the tree with their silk. When an unfortunate insect flies into the colony, the spider senses the impact through vibrations transmitted through the silk threads alerting nearby spiders that then converge on the prey. However, only one spider, usually the web owner, will finally capture and feed on the insect. Their vibrational communication is additionally important for courtship and to defend the colony.

Wasps are the main enemies of colonial Cyrtophora. When a wasp attempts to attack a Cyrtophora, the spider will shake its web violently to deter the wasp, and these web vibrations induce other spiders in the colony to equally shake their webs. Soon the entire colony is “humming” with vibrating webs. Males of Cyrtophora citricola, which are smaller in size than females, wander through the colony in search of a virgin female and when one is located, the male begins to court her by plucking and strumming on the threads of her web. If the female approves of his courtship song, they will mate. However he must choose his mate wisely, given this might be his only chance to mate as he is then eaten by the female. This may be the reason why their intricate courtship songs and dances may last up to several hours.

Dr. Yael Lubin investigates the evolution of sociality, mating systems and sexual selection in spiders, the ecological mechanisms determining species diversity in spiders, and spiders as biocontrol agents in agro-ecosystems. She received her Ph.D. from the University of Florida and conducted ecological research in Papua New Guinea, Panama and the Galapagos Islands before joining Ben-Gurion University of the Negev in Israel in 1985. Lubin is current President of the International Society for Arachnology.