

# ***INTERROGATING AN INSECT SOCIETY***

## **Raghavendra Gadagkar**

Centre for Ecological Sciences & Centre for Contemporary Studies  
Indian Institute of Science, Bangalore, 560012, India

E-mail: [ragh@ces.iisc.ernet.in](mailto:ragh@ces.iisc.ernet.in)  
URL: <http://ces.iisc.ernet.in/hpg/ragh>

Insect societies consist of one or a small number of reproductives (usually only queens but also kings in the case of termites) and a large number of sterile or nearly sterile workers. While the queens engage in laying eggs, all the tasks required for nest building, acquisition and processing of food and brood care are performed by the workers. How do such societies function in a coordinated and efficient manner? What are the rules that individuals follow? How are these rules made and enforced? These questions are of obvious interest to us as fellow social animals but how do we interrogate an insect society and decipher its “language”? In this lecture I will describe research designed to seek answers from insect societies to questions of obvious interest to us. I have chosen the Indian paper wasp *Ropalidia marginata* for this purpose, a species that is abundantly distributed in peninsular India and that serves as an excellent model system. An important feature of this species is that queens and workers are morphologically identical and physiologically nearly so. How does an individual become a queen? How does the queen suppress worker reproduction? How does the queen regulate the non-reproductive activities of the workers? What is the function of aggression shown by different individuals? How and when is the queen’s heir decided? I will show how such questions can indeed be investigated and will emphasize the need for a whole range of different techniques of “interrogation”. This lecture will be as much about the “process” of science as about its “product”.